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Benjamin F. Miller, M.D.

THE
COMPLETE
MEDICAL
GUIDE

Illustrated by R. Paul Larkin



SIMON AND SCHUSTER

New York

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TO

CHESTER M. JONES, M.D.

*who taught me so much at medical
school, and then in later years gener-
ously and skillfully guided me back
to health during a long illness.*

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Introduction

THIS IS A book written for all adults. I believe it will serve the health information needs of the mother and father in the home, as well as those of unmarried men and women. I hope, too, that older people—our senior citizens—will find sound advice in it to make their golden years even richer.

Because of the many sections dealing with purely adult matters I do not recommend the book for children or adolescents. However, any person old enough to contemplate marriage, or mature enough to be working for a livelihood, is surely old enough to be concerned with the intimate matters of health and sexual hygiene that are contained in some chapters.

The book has several purposes. I have written it as a guide to the complex world of health and medical matters. I believe people will be healthier and happier if they read and follow the advice on nutrition, alcohol, posture, mental health, first aid, and the many other matters which play a part in everybody's life. Other chapters dealing with job hazards, marital problems, housing, pregnancy, child care, home nursing, etc., contain information that is of special interest and value to different members of the family.

Another chief purpose of the book is to serve as a reference work. Every major disease such as cancer and diabetes has been described, as well as many of the less common ones. The "nuisance" ailments from dandruff to hemorrhoids have been given space. All this information is at your disposal by reference to the chapter headings and to the Index, which has been made as comprehensive as possible.

Third, the book provides a dictionary of medical terms. Today, an educated person must be conversant with such technical matters as the electrocardiogram, basal metabolism, antibiotics, Papanicolaou smears for cancer detection, and hundreds of other terms. To help in this sometimes bewildering area, I have prepared a dictionary with both definitions and pronunciations of the terms you are most likely to encounter in daily life.

Finally, this book is designed as an integral part of the doctor-patient

relationship. *I view my book as an extension of your personal physician, not as a replacement for him. Doctors who have read this book agree with me. They point out that no physician can take complete responsibility for the health of his patient. Your doctor has to assume that you will read and educate yourself regarding matters as vital as balanced diets, prevention of accidents, mental hygiene, and the dozens of subjects covered in this book. It would take several days if he sat down with you and gave you even a digest of the health information contained in a comprehensive health manual such as this. No doctor can afford the time to do that.*

Your doctor welcomes the fact that I stress (1) prevention of illness, (2) detection of sickness in its earliest stages if it is not a preventable type, and (3) recognition of the danger of self-treatment in potentially serious conditions. Thus, this book helps your doctor do his important job better.

Physicians in particular may wonder how one person has "dared" write a comprehensive health book alone, especially in this day of specialization. I wanted this book to convey a unified point of view, with a consistent approach to the many problems concerning the prevention of sickness and the achievement of ideal health. I also felt the need of a book in which one style of writing was maintained, so that the reader would become well acquainted with the author, instead of having to adapt to a new personality with each chapter. Therefore, I determined to write the book myself. However, I wanted the book to have the advantages made possible by specialization, and so experts in various fields were consulted, particularly in areas outside my special training or experience. The chapters dealing with these subjects have been carefully checked by them. I owe a tremendous debt to the following specialists for their expert advice and suggestions: Frances Bowen, R.N., Leslie Falk, M.D., Harriet L. Hardy, M.D., Ralph J. Kahana, M.D., Maxwell P. Lewitus, D.M.D., Richard J. Manley, Ph.D., M. M. Osborne, M.D., Leon Resnik, M.D., Melvin H. Rosen, D.M.D., Arthur J. Schramm, M.D., Kenneth Sterling, M.D., John Vester, M.D.

* * *

Additional Acknowledgments

I started this book a number of years ago, and have been thinking about it and planning it for a long time. Then during the past year almost

everything I had done had to be brought up to date because medical knowledge fortunately is always moving ahead. During all these years I have been discussing the book with physicians and nurses and non-medical people—in fact, anyone who would listen to my obsession about writing a comprehensive, understandable health book. I doubt that I can remember everyone who has offered suggestions and criticisms. If I have omitted someone, I beg his or her forgiveness.

There are some persons who have worked actively with me in a research or editorial capacity during various phases of the writing of the book. I want particularly to thank my wife, Zelma, who with this as with my other books and articles has been an invaluable helper and critic. Also, Rhoda Truax, author of a number of excellent medical biographies and novels, was kind enough to help in the preparation of this large manuscript. In the early period I had valuable assistance from Geneve Simpson, Beulah Harris, and Scott Bartlett. Esther Weiss, Ruth Sterling, and Dolores Weeks also made some useful contributions.

I am indebted to the following for permission to reprint or adapt material from their books: My colleague, Dr. Maurice Levine, from his Psychotherapy in Medical Practice, 1942 (14th printing 1953), and to the publisher, The Macmillan Company, for their permission; to St. Martin's Press Incorporated, New York, and The Macmillan Company of Canada, Ltd., for the quotation written by A. J. Amor in Medicine, edited by Hugh G. Garland, 1953; Harcourt, Brace and Company, Inc., for the passage from Carl Sandburg's The People, Yes, 1936; Alfred A. Knopf, Inc., for the quotation from The Happy Family by Levy and Monroe, 1938; The Metropolitan Life Insurance Company for the table on "Desirable Weights for Men and Women."

To Henry Simon I owe much gratitude for his careful reading and rereading of the manuscript, and for the many suggestions he has made. Tom Bevans of Simon and Schuster has been most helpful with the illustrations. And I might add a note of thanks to Jason Berger and the many others who have made my association with this publishing firm such a pleasant experience.

The illustrator, R. Paul Larkin, has been a joy to work with because he conveyed to me so much enthusiasm for the book along with his artistic skill.

I am grateful for having had several devoted secretaries who have helped with this long manuscript, and thank Grace Kawamoto, Eunice Staples, and Adelaide Evans.

Finally, I want to thank my children who have contributed in their way to this book: Susan by reading some of the text; Betsy by always trying to think up a good "snappy" title; and Joey for tiptoeing quietly past my door when "Daddy has to work on the book."

B. F. M.

PART ONE

**YOU AND YOUR
BODY**

CHAPTER 1

General Care of the Body

IF YOU bought your body as you do an automobile, a piece of furniture, or a garment, you would undoubtedly receive instructions with it telling you how to take *reasonable care* of your purchase. I am sure you would read them carefully. You would want to avoid fussing or worrying about things needlessly and yet be sufficiently careful so that your purchase would remain in good condition as long as possible.

This chapter covers the subject of reasonable care of the precious human body. Here, I shall deal with matters involving the entire body, such as fresh air, cleanliness, sleep, posture, exercise, smoking, and alcohol. The food you eat belongs in this category, but the subject is so large I devote all of Chapter 2 to it. Chapter 6 tells you how to take care of the individual parts—the various organs and tissues—of the body.

Books on health were limited to these subjects in the past, and this tradition continued even after doctors came to realize that they were only one (although an essential) part of your total health program. Many of these books would tell you exactly how long you should sleep, how far open the windows should be, how cold a shower you should take, and what setting-up exercises you should do. They failed to take into account such obvious matters as the fact that you may be getting more than enough exercise on your job, or that you live in a house with no running water and with rooms that are icy cold until some time after you have lighted the stove. There are still a few doctors who are inclined to believe that what is best or customary for them and the majority of their patients is essential for everyone. If, for example, you should ask the average small-town doctor in Europe how often people should take baths, he would probably say, "Once or twice a week," whereas the average American doctor would probably answer automatically, "Every day." Actually this, like many other things, depends on your situation and your personal preference.

THE AIR YOU BREATHE

“Fresh air” is a frequently misunderstood term. It doesn’t mean that our bodies need air blowing through a room all the time. Unless a room is completely sealed up, enough air comes in around doors and windows to provide oxygen for breathing. Whether more air should be circulated through the room depends on your own comfort and desires.

These vary a great deal. A few generations ago air in itself was considered dangerous, especially night air, which was supposed to carry disease-laden vapors (called miasmas) and drafts, which doctors blamed for any number of illnesses. The result was that many of our ancestors accustomed themselves to wearing several layers of underclothing in all seasons, and to sleeping with their windows tightly closed. They even had draperies hanging from canopies over their beds for added protection, and babies were wrapped up like mummies. (See page 370 concerning air and clothing for infants.)

With such discoveries as the fact that malaria was caused by mosquitoes and not by night air, the pendulum began to swing in the opposite direction. One of the results of this was the “fresh-air fiend” who went around flinging windows open to the discomfort of his associates. A patient of mine, a middle-aged woman from a well-to-do New York City family, told me that her parents were so sold on the virtues of fresh air that they insisted on her being out of doors regardless of the temperature. As she was not a very active child, she was cold most of the time, even suffering from frostbitten fingers and toes. In some countries and among some groups, drafts are still carefully avoided, while other folks enjoy rooms that resemble the great open spaces.

There is no evidence to prove that one situation is more healthful than another. Some people feel definitely better with windows open while others feel uncomfortable—even sick—when exposed to drafts of cold air. *Each person needs to find the condition to which he reacts best.*

DANGEROUS HEATING APPLIANCES

When coal, wood, or gas is burned in fireplaces, stoves, or radiators, it consumes oxygen. Oxygen is essential for life. When such heating methods are used, make certain that air is entering the room. If the doors and windows fit snugly (so that you don’t feel any air coming in when you place your hand near the sills), be sure to open one of them a little. Always be careful to protect a gas flame from drafts that might blow it out, leaving the gas pouring into the room. This has been the cause of many serious accidents. (See page 457.) Electric heaters and electric stoves *do not* use up the oxygen in the air.

TEMPERATURE OF ROOMS

There is, of course, a problem when it comes to getting along with people whose standards of comfort differ from your own. The average person seems to prefer a room temperature between 70° and 75° F. If you like to be warmer or colder than your associates, try to take care of this by the clothing you wear; there is a big difference between the warmth provided by various suits, or between a sweater and a thin blouse. Garments should be loose enough not to restrict the body in any way and should permit the absorption or evaporation of perspiration. They should be chosen for comfort rather than simply for style.

HUMIDITY AND COMFORT

Besides the freshness of air, its moisture content (humidity) may influence health. Again, each individual must find his own prescription. Some people feel well in cold winter climates where the *indoor* air is extremely dry. Other people notice that this dry atmosphere causes irritation of the nose and throat. They react very much better after they humidify the air by putting pans of water around the house, especially on or near the radiators. Some people are relatively comfortable when the air is warm and moist in summer. Others are so oppressed by it that they need a fan or an air-conditioner. Because perspiration evaporates more readily in dry air, thus cooling the body, most people mind the heat less when it is not combined with dampness.

It is best not to expose the body directly to a fan, especially at night, because the chilling may predispose to an attack of neuralgia, bursitis, or even pneumonia. Air-conditioners should have thermostats so that they will not cool rooms to uncomfortable temperatures.

REST AND SLEEP

The number of hours of sleep required for good health varies tremendously from person to person. Eight hours each night appears to be average, but we have all heard about people like the famous inventor, Thomas A. Edison, who got along very well on five hours, and others who require more than eight hours a night. The essential test is whether you feel rested in the morning and have sufficient energy to carry through the day's activities. If you don't, chronic fatigue may accumulate and contribute to what can be a serious illness. *Insomnia*, or the inability to sleep, is discussed under *Nuisance Diseases*, page 732.

Some people need *rest periods* during the day almost as much as they

need adequate hours of comfortable sleep. These are particularly useful, even essential, for people who work very hard, engage in long hours of work, or are inclined to be tense. With a little planning you can generally work out a schedule that will enable you to get a rest at noon or right after work. Some fortunate individuals can drop off to sleep practically at will, awakening after even less than a half-hour feeling quite refreshed. If you aren't one of them, try to find the way you can best relax. Getting the feet up is restful. Some people relax best when listening to music.

Periods of *relaxation* which are found in *pleasant recreation* are necessary to most people at least once a week. More and more it is being recognized that a yearly *vacation* helps to safeguard good health. (See Chapter 9 on Vacations.) Church affairs and social activities with friends and one's family provide excellent relaxation. So do *hobbies* and *exercise*, or sports, which are discussed below.

HOBBIES

Hobbies provide relaxation and help to maintain your zest for living, which we doctors have come to realize is immensely important to your health. Like most physicians, I have observed this frequently in my patients. The ones who have developed hobbies tend to be healthier as well as happier, especially in their later years, than those who lack outside interests.

Ideally, each of us should have an indoor and an outdoor hobby that gives us genuine, long-range satisfaction. Some energetic folks change their hobbies every year or two, keeping a direct relationship between the indoor and outdoor activity. For example, one year the outdoor hobby will be archery and the indoor diversion Indian art; the next year the combination may be sailing and ship models. I prefer to be more casual, letting the hobby grow with time. I enjoy photography, which lends itself to both indoors and outdoors; piano playing and fishing or swimming have also served well for me.

Hobbies need not be expensive. Some of them, like gardening and refinishing old furniture, can more than pay for themselves. Be sure to find something you enjoy. Don't be like a patient of mine who came to me some time ago when his own physician retired. A businessman in his fifties, he had been collecting stamps for years; it was only after I got to know him fairly well that he admitted it had always bored him. He had taken it up because his doctor recommended a hobby, and it was the only one he could think of! While he was telling me this, he doodled on a pad lying on the desk; and in reply to a comment of mine he remarked that he had always liked to draw but had never thought of it as a suitable

hobby for a man in his position. Now he belongs to the ever-growing group of amateur "Sunday artists."

Learning can be one of the most fascinating of hobbies. Today almost everyone can take a course through the extension department of a university or an adult education project. (The Adult Education Association of the U.S.A., 743 N. Wabash Avenue, Chicago 11, Illinois, will tell you about the opportunities existing in your vicinity.) These courses usually include everything from the arts and crafts to languages, current events, and such subjects as science, philosophy, and psychology. One of them is almost certain to appeal to you.

EXERCISE AND SPORTS

Many people obtain all the exercise they need on the job or walking to and from work. In the matter of exercise, perhaps more than any other subject taken up in this chapter, the factor of individual likes and dislikes and reactions is tremendously important. I suggest that you discuss with your doctor what exercises, sports, and games you plan to engage in. If you think of trying something new, for example, handball or tennis, talk it over with your doctor, particularly if you are entering the middle or later years of life. Some people can safely engage in very strenuous sports and exercises, even until they are very old. Others need to start cutting down relatively early in life. On the basis of his knowledge about your own medical condition and the history of illness and longevity in your ancestors, your doctor can advise you (see Periodic Health Check-ups, page 543).

CHOICE OF SPORTS AND ATHLETICS

I prefer to have my patients get their exercise from games they enjoy rather than from planned calisthenics or systems of exercise. Few people will stick to dull, routinized exercises. The fun and competition of an athletic game stimulate interest, so that you enjoy your exercise. However, too many young people, especially young men, become proficient only in those sports which cannot be carried into later life. Some of these, such as boxing, carry the continual threat of body injury. Highly competitive sports including football, baseball, basketball, crew, and track do not serve a useful purpose in the individual health program in later life. They are either too strenuous, or they require too many participants. A busy adult with job and family responsibilities can rarely get up a neighborhood baseball game.

It is wise for the athletically inclined to take advantage of their high-

school and college facilities to become proficient in one or two of the following sports. I have selected some that can be carried into middle and even late life, to the benefit of body and muscle health, strength and good posture:

Swimming
Golf
Tennis
Handball
Canoeing

Hiking
Badminton
Squash Rackets
Horseback Riding

These are desirable because they require only one or two people. They lend themselves to weekend relaxation. Married couples can enjoy them together, later participating in them with their children.

Hiking and swimming are good sports for people of all ages, especially those who enjoy the outdoors. Many communities have indoor pools so that it is possible to swim regardless of the season. Neither of these sports need be expensive.

POSTURE

Good posture is usually an expression of good health rather than a major factor in producing good health. A healthy person will as a rule automatically find a comfortable, attractive posture. Pride and poise will do away with slight slouches or round shoulders. You'll be surprised by the feeling of well-being that comes with good posture.

If your posture is not easy to correct, there is probably some medical reason for it, unless you are being influenced by some foolish fashion such as the debutante slouch of the 1920's or the sloppy Joe pose of more recent years. It is far wiser to invest in an examination by your doctor or at a hospital clinic than to spend money on a course in posture building. Your doctor can establish the cause and, if special exercises or braces are needed, he will prescribe what is right for you. Foot troubles caused by badly fitting shoes can be responsible for poor posture. (See page 143.)

There are a few posture rules worth putting into practice every day. At work, at school, or at home, your chair should feel comfortable and should give sufficient support so that your back rests against its back. The chair should be strong and solid enough to take your weight comfortably, and not sag or rock when you sit in it. This is particularly true of the soft chairs found in so many homes, which tempt us to curl up or slump until we are practically "sitting on the back of the neck." Difficult as it may be to believe, people would be far more comfortable, especially

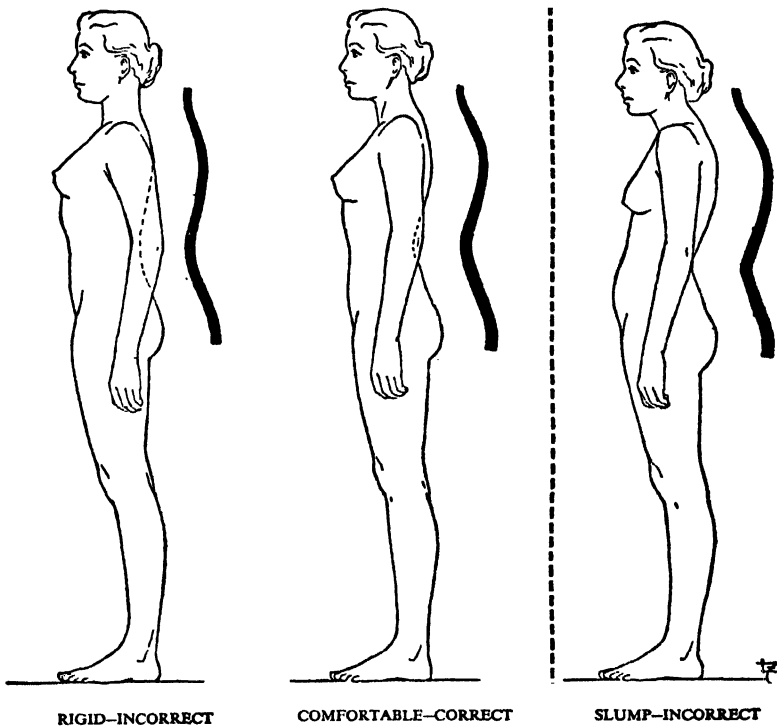


Illustration 1-1. STANDING POSTURE.

LEFT: Incorrect. Standing in this rigid, military position, with the chin pulled in and the backbone unnaturally straight, causes tension and strain, especially on the knees and the back muscles. **CENTER:** Correct. A minimum of fatigue results when standing in this easy, comfortable manner, with the chest slightly raised and the buttocks "tucked in." It is also important because it permits organs such as the lungs and stomach to be in their proper positions. **RIGHT:** Incorrect. Slumping in this too-relaxed manner, with the chin thrust forward, the chest sunken, and the stomach protruding, can cause a number of ailments, including "round shoulders" and backache.

over a long period of time, if they sat in relatively hard chairs with good, fairly straight back supports. The choice of a well-designed chair is especially important for people who sit for long periods at their work—for example, typists and office workers. They should sit squarely, with their feet placed on the floor a short distance in front of their chairs, avoiding bad habits such as wrapping one leg around the leg of the chair.

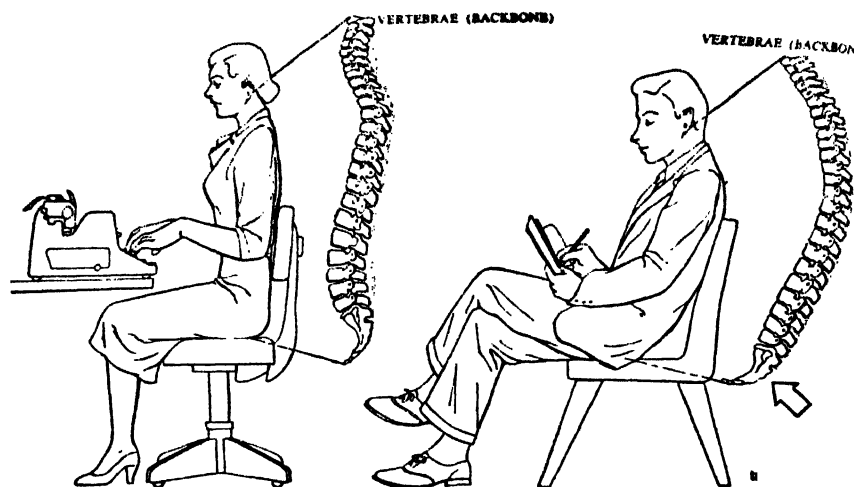


Illustration 1-2. POSTURE WHEN SEATED.

LEFT: Correct. The backbone is in its normal position, with its burden equally distributed. The feet rest on the floor. The chair is adjustable, so that the work surface is at the proper height. **RIGHT:** Incorrect. Slouching puts too much of the weight on the end of the spine (indicated by arrow). The shoulders are rounded, the internal organs compressed, and the legs twisted, straining the muscles and interfering with the circulation.

A patient of mine, a six-footer who travels a great deal by car, told me that he always pulls the seat as far forward as possible when he is driving. In this way he sits quite straight, his back supported, and is able to press down on the accelerator instead of having to stretch out his leg to reach it at an angle; this is far easier on the muscles of the back as well as of the leg.

Posture for the standing position is important if your work requires you to be on your feet for long hours at a time. Study the illustrations which show good and bad posture. When correcting your posture, find a relaxed, attractive stance that feels restful. Do not try to stand as erect as a soldier at a military parade.

If your posture does not satisfy you, try to improve it by a period of exercises. Also, be sure your weight is correct as judged by the information I give in Chapter 3, page 43. Develop skill in one of the sports I have suggested, or take long walks. If after several months you are still troubled by a faulty standing position, or rounded shoulders, or protruding abdomen, see your doctor for a checkup and advice.

WHAT TO DO ABOUT THE SAGGING WAISTLINE

Few people are lucky enough to get much beyond the age of 35 or 40 without some extra fat or muscle sag around the waistline. By combining the reducing diet, or "hold your weight" advice, that I give on pages 54 to 59, with a daily period of the following exercises, you should restore your waistline to normal within a few months.

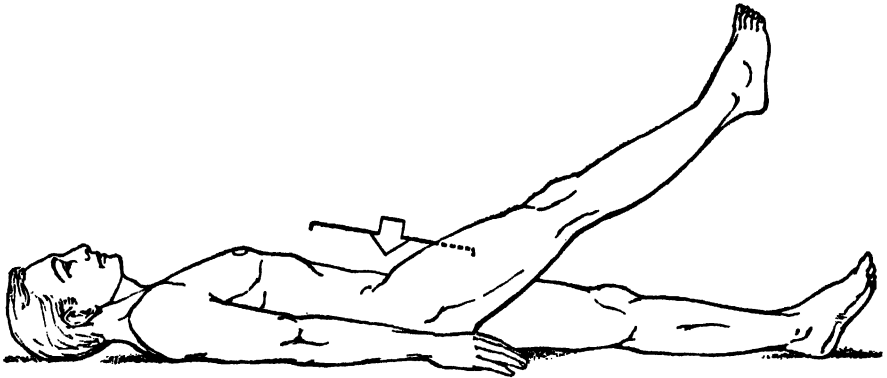


Illustration 1-3. EXERCISE FOR MUSCLES OF LOWER ABDOMEN.

Raise leg slowly without bending; hold it up while counting to ten (about ten seconds); lower it slowly. Do the same with the other leg. To strengthen the muscles without straining them, begin by repeating the exercise two or three times, and increase gradually until you can do them about twenty times without straining.



Illustration 1-4. EXERCISE FOR MUSCLES OF UPPER ABDOMEN.

With arms folded over chest, raise head slowly, keeping legs on the floor; hold for about ten seconds. Repeat two or three times. As muscles grow stronger, increase gradually to about twenty times.

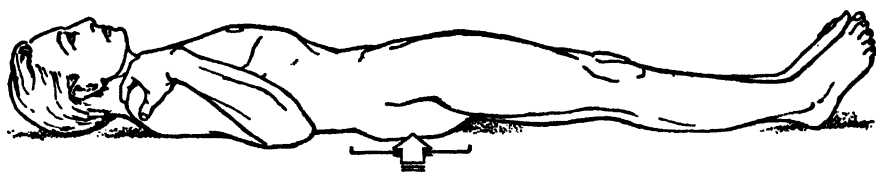


Illustration 1-5. EXERCISE FOR MUSCLES OF BUTTOCKS.

While lying flat, tighten the buttocks as much as possible, and hold for about ten seconds before relaxing. Repeat two or three times. Increase gradually to about twenty times.

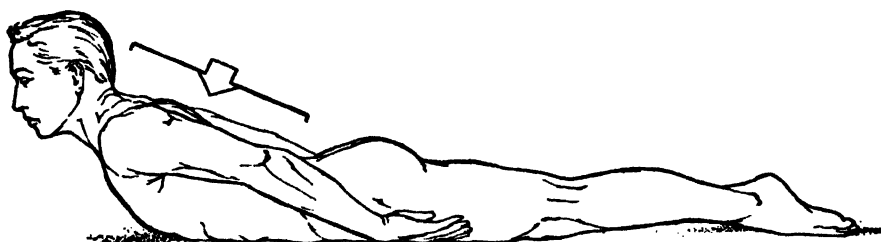


Illustration 1-6. EXERCISE FOR MUSCLES OF BACK.

Keeping arms at side and legs on the floor, slowly raise chest and shoulders; hold for about ten seconds; lower slowly. Increase gradually from two or three times to about twenty times.

THE "MIDDLE-AGED SPREAD" IN WOMEN

Women in their forties and fifties usually develop flabby muscles and extra fat around the hips (really around the thighs, buttocks, and lower abdomen). This combination of fat and poor muscle tone gives the so-called "middle-aged spread." The following measures are helpful: (a) weight control or reduction of weight as described on page 56, (b) use of the above exercises, (c) some discretion in the selection of clothes, with the realization that at forty a woman can no longer wear the styles that are becoming to a twenty-year-old (especially true of slacks and dungarees!), (d) a philosophic approach to middle life with some sense of humor about the exaggerated importance placed on a trim figure in our society. By forty or fifty, a woman's beauty should reflect her sense of accomplishment as a human being, whether wife, mother, teacher, nurse, etc.—and not merely as a glamorized "clothes horse."

POSTURE DURING AND AFTER PREGNANCY

Many women lose their fine carriage and figure during pregnancy, and never regain their former good posture and muscle tone. There is no need for this. During pregnancy, the pull on the abdominal and back muscles can be reduced by the use of maternity corsets which your doctor will prescribe if they are necessary.

After the baby has been born, the mother should carry through the series of exercises given on page 362. These will help bring back the strength of the abdominal muscles. Many women have borne a half dozen children and have retained youthful, trim body outlines.

POSTURE FOR CHILDREN AND ADOLESCENTS

Correct posture for children and adolescents is discussed on pages 433 and 444.

USE OF ALCOHOL, TOBACCO, DRUGS

Before I take up these subjects individually, I want to remind you that I am speaking as a physician. I feel it would be presumptuous of me to discuss the aspects of these matters that are concerned with their purely moral or religious implications. For example, even the most moderate use of tobacco or alcoholic beverages is forbidden by some religious denominations. Nothing I say should influence you regarding matters that each of us must decide in accordance with his or her own conscience, and with the help of spiritual advisers. I am limiting myself to telling you what medical science has, to date, discovered about the effect of stimulants upon your body.

ALCOHOL

Although usually considered a stimulant, alcohol is actually a depressant. It *appears* to lessen fatigue and make you peppy because it, in effect, takes the brake off certain processes. For example, even a fairly small amount of alcohol lessens the cerebral inhibitions which we normally exert in order to "behave properly," and this makes us feel relieved and free.

Alcohol is useful in certain diseases and harmful in others. People who consider a drink of whiskey as the initial step in all first-aid treatment can do a lot of damage. (It is definitely harmful, for instance, in cases of heat stroke and snake bite.) People with some diseases may have a

certain amount of alcohol prescribed for them; in other illnesses it is forbidden. If you or anyone in your family is suffering from any ailment, be sure to discuss the matter with your doctor before taking or offering drinks.

ALCOHOL FOR THE NORMAL, HEALTHY INDIVIDUAL

There is no evidence to prove that moderate drinking will *cause* any disease, or injure the general health, or shorten the life of the healthy adult. What do I mean by moderate drinking? This is not easy to define exactly, since the amount which different people can tolerate varies considerably. Most of us doctors would describe the moderate drinker as one who takes one or two drinks a day, e.g., a couple of highballs containing two ounces each of whiskey, or a quart of beer during the course of several hours. The moderate drinker takes his alcoholic beverages for relaxation, never as a constant necessity. He does not become intoxicated. Taken in this way, there is no physical harm in the use of liquor. It can be a source of great pleasure. Yet even under these circumstances there may be some impairment of judgment or coordination; there are people who ought not to drive a car after drinking even one small glass of sherry.

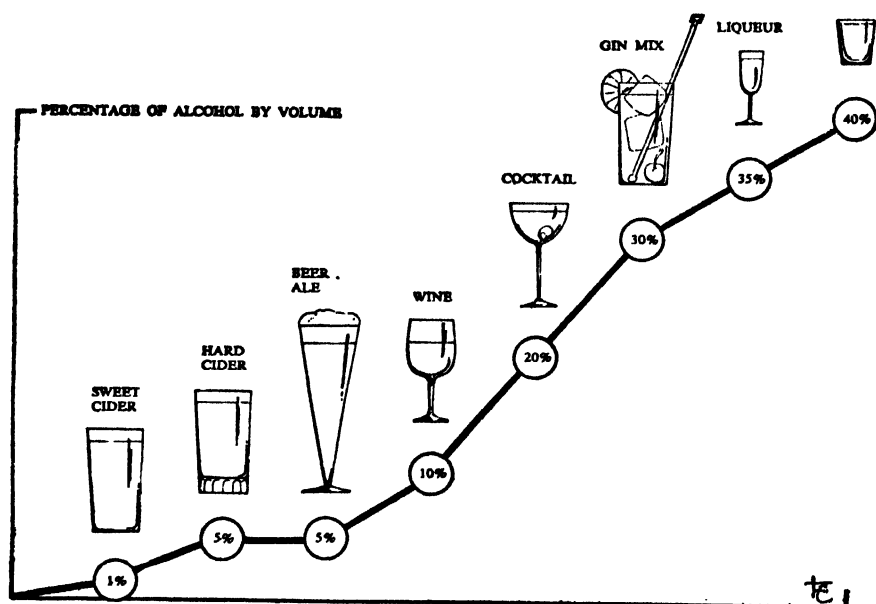


Illustration 1-7. ALCOHOLIC CONTENT OF BEVERAGES.

EXCESSIVE DRINKING

Again, this does not depend solely upon the amount of alcohol consumed. Some people—the French, for example—drink as much as a pint of wine with every dinner but are not excessive drinkers. By excessive drinking I mean getting intoxicated or drinking to the point where it interferes with one's job, one's family life, and one's relation to society. The person who drinks excessively is practically a criminal when he is behind the wheel of a car or otherwise assumes responsibilities he is not capable of fulfilling. He or she often has hangovers. Excessive drinkers often fail to eat properly and otherwise neglect to observe the rules of good health, thereby suffering from a number of illnesses as a direct consequence of drinking.

THE CHRONIC ALCOHOLIC

We doctors distinguish between the excessive drinker and the chronic alcoholic, although the former may become the latter without realizing it. The excessive drinker uses alcohol on occasion to escape from unpleasant situations, but the alcoholic wants to escape from life, or from himself, completely. No matter how bad a hangover he may have, he craves a drink again, often in the morning before (or instead of) breakfast. One of the surest signs of the chronic alcoholic is that he cannot take one drink without wanting more; "one drink is too many, a hundred not enough."

Sooner or later, the alcoholic cares for nothing but drinking. His health suffers for a number of reasons, one of the main ones being his failure to eat properly. Alcohol provides him with calories enough to keep him from feeling hungry, but alcoholic beverages lack vitamins, minerals, and other requirements. Deficiency diseases (see page 34) result; eventually, a number of afflictions may involve the brain, the nerves, and the liver. Some of these illnesses are fatal and all are relatively disabling.

CHRONIC ALCOHOLISM IS AN ILLNESS

I discuss this fully in the chapter on Disabling Diseases, page 692. The one fact which you should always bear in mind if you or someone close to you suffers from or is threatened by this condition, is that your doctor recognizes it as a serious *medical* problem. Unlike some of your neighbors, he will not condemn or joke or sermonize or dismiss you with some pious words of sympathy. Don't try patented "cures." Be sure to consult a physician or go to a hospital clinic for proper advice and treatment. You may say an alcoholic can't be helped unless he wants to be cured,

but this does not mean alcoholism is not an illness. There are many diseases which doctors cannot help without the cooperation of the patient—for example, diabetes can't be handled unless the patient is willing to take his insulin and observe his diet. A doctor will know how best to get cooperation from an alcoholic, which ones will be benefited by joining the well-known organization called Alcoholics Anonymous, and which will respond better in a hospital or sanatorium where new and excellent treatments for alcoholism have been worked out.

TOBACCO

Whether or not you want to use tobacco is a personal matter. There is little a doctor can tell you unless you are one of the rare persons who experience symptoms directly related to the use of tobacco. There are illnesses—for example, some types of hardening of the arteries of the legs and arms—which definitely require giving up tobacco in all forms. It has not yet been established whether or not the use of tobacco influences your length of life or has any effect on the heart. Some old ideas, such as that smoking will stunt the growth and cause any number of diseases, have been disproved. However, there is a relationship between the use of tobacco and the occurrence of cancers of the lip, mouth, tongue, and lungs. This doesn't mean that heavy smokers will necessarily develop cancer; but it does mean that if you are a heavy smoker and come from a family where there have been numerous cancers of the skin, mouth, or lungs, your doctor should know about it. He can then be doubly careful in looking for any suspicious, precancerous lesions.

You may wonder why I don't tell everyone to give up cigars, cigarettes, and pipes since there is a connection between some cancers and smoking. One reason I don't is that the experience of years indicates that most people won't follow my advice. Habits are hard to break, especially ones which don't immediately and obviously produce harmful results. Many doctors admit privately that smoking is expensive, dirty, and unhygienic—and that they wouldn't dream of stopping themselves! They consider the dangers of smoking slight and the pleasure great, and are willing to take a chance. (I discuss this under *The Calculated Risk in Health*, page 817.)

Instead of telling you to quit smoking, I urge you to discuss your smoking habits with your doctor at one of your periodic checkups. Tell him any physical reactions to smoking you have observed. On the basis of your reactions, the amount of tobacco you use, your medical history, and your family medical history of heart disease and cancer, your doctor can tell you whether it is particularly important for *you* to cut down on your

smoking or give it up entirely. Another piece of advice I hope you will follow is: if you must smoke, do it in moderation. Just how many cigarettes, cigars, or pipefuls a day that means depends on you, but try to limit yourself to the ones you actually *want*: after meals or when you can really relax and enjoy them.

Incidentally, it is likely that no brand of cigarette is "better for you" than any other brand. There is almost twice as much nicotine in most domestic brands of cigarettes as in Orientals. Filters can remove a good deal of the nicotine from cigarette smoke. However, it is probably not the nicotine but rather the irritating effect of the pipe, cigar, or cigarette, and of *the smoke* itself, that encourages the development of cancers.

HOW TO STOP SMOKING

Your doctor may tell you to stop smoking, or you yourself may decide to do so, perhaps because of an irritating cough, or in order to save money. The following method has been extremely successful, as I can tell you from my own experience as well as the experience of many patients.

The trial run. The first thing to do is to discover how intense the habit is in your case. You may find out that you can cut down from a pack of cigarettes a day, or the continual puffing on a pipe, to one smoke after each meal. Try it, because smoking that little is almost always harmless. If it doesn't work—and it usually doesn't—cut out smoking entirely. Some people find, to their surprise, that they can stop without much difficulty simply by making up their minds to do so. They may substitute chewing gum for a while. If this doesn't work, that is, if you find it too distressing, go back to smoking again for a few days. Then set the day, preferably a Monday, when you will come to grip with the habit, and break it by the following technique.

Breaking the habit.

- Day 1. Do not smoke in the morning, except for one cigarette after breakfast. Do not smoke your favorite brand, but substitute for it a cigarette you do not care for, preferably one that is denicotinized, or has a filter; or use a cigarette holder with a filter.
- Day 2. No smoking in the morning. No smoking in the afternoon except for one cigarette after the noon meal, substituting for your favorite brand, as described above.
- Day 3. No cigarette, except one at night if you really need it. Plan a busy day and evening, avoiding social gatherings which encourage smoking. Go

to a movie or some other place where smoking is impossible or difficult.

General suggestions: Eating, chewing gum, sucking on candy, etc., are very helpful. Don't worry about gaining weight during the first week or so when you are breaking the smoking habit. It also helps to find something to do with your hands, such as knitting, whittling, or simply twirling a key ring or handling the coins in your pocket. If you find yourself nervous and jittery, especially on the fourth, fifth, and sixth day when you have no cigarettes at all, take some aspirin, Bufferin, or $\frac{1}{8}$ grain of phenobarbital which your doctor will prescribe for you.

Day 7. If you aren't proudly boasting that you have broken the smoking habit, but are going around biting your nails and feeling a "nervous wreck," then you will either have to make it by sheer will power or, preferably, visit your doctor, who will help you over the difficult withdrawal period with heavier sedation and the encouragement he can give better than anyone else.

Caution: Watch your weight. People who give up smoking usually gain weight. After the first week or so, or when you no longer crave a smoke, start taking the precautions about diet I suggest on page 53.

USE OF COFFEE AND TEA

Both coffee and tea contain caffeine, which is a stimulating compound. Coffee and tea in moderate amounts are not harmful. The use of more than three or four cups of coffee or tea per day may lead to restlessness, overactivity, nervousness, insomnia, and excessive urination. Each person needs to find the correct amount for his own particular system and habits of life. Some people can take coffee or tea shortly before going to bed without any interference with sleep; others find that the caffeine in these beverages keeps them awake for several hours or more.

The coffee habit can become a very serious one. A patient came to me complaining of severe attacks of dizziness which almost reached the fainting stage. She was greatly worried for fear that she had high blood pressure or some serious illness. It turned out that she had become addicted to coffee, always had a pot boiling on the stove, and was consuming twenty to twenty-five cups of strong coffee each day! Her symptoms disappeared as soon as she reduced her consumption of coffee to a few cups daily.

Coffee and tea should not be given to children. Even when so much water is added that there is practically no caffeine present in a cup of these beverages, they should not be substituted for nutritious drinks like

milk and fruit juices which growing children and adolescents need even more than adults. (The caffeine in cocoa is negligible.)

COLA DRINKS

Most cola drinks contain caffeine—approximately the same amount as is in a cup of coffee. Obviously, the cola-drink habit can be as serious as the coffee habit I discussed above. In fact, it can be more serious, since many people do not realize that there is caffeine in these drinks, and consume quantities of them, or let their children have a number of them a day, spoiling their appetites for essential foods.

Always think of cola drinks as though they were coffee. Your children are better off without them; and you yourself should set a daily quota which does not make you suffer from any of the symptoms caused by too much coffee.

HOW MUCH WATER SHOULD WE DRINK?

The amount of water drunk each day is usually correctly adjusted by your sense of thirst. The body loses each day about a quart of water in the invisible perspiration from the skin, and as water vapor expired in the air from the lungs. This loss of water plus the quart or more of water contained in the daily urine must be supplied chiefly by

- (1) *Water in solid foods*, e.g., vegetables and fruits are high in water content.
- (2) *Water in fluids* such as milk, soups and beverages.
- (3) *Water* taken as such. This will balance any difference between the above intake and output.

In hot weather, or when you work in a hot area, your body requires more water to compensate for the loss of sweat (the *visible* perspiration may amount to many quarts a day). Because the sweat contains salt, too, it is necessary to replace the salt also (see page 36).

IS EXTRA WATER NECESSARY FOR GOOD HEALTH?

There is an old belief among some people that it is necessary to drink very large amounts of water and other fluids to remain healthy. Some people have an almost mystical belief that this large amount of water washes poisons out of the system, especially through the kidneys. Medical research has shown that this is not true and that the ordinary amounts of fluid that are taken in are sufficient to remove all the waste products

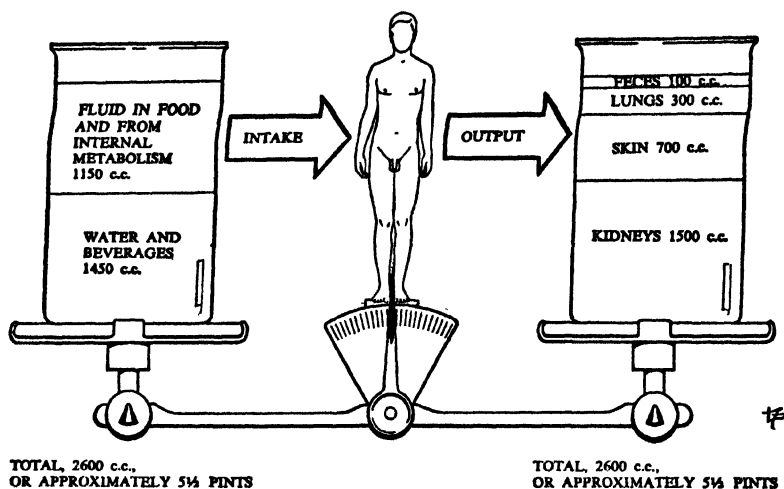


Illustration 1-8. FLUID BALANCE OF THE BODY.

This diagram shows the sources and the quantity of fluids required by the average, moderately active man, and how they are eliminated.

through the kidneys. Only in exceptional cases, such as I list below, is it necessary to take larger amounts of water and fluid than are mentioned above.

IS IT DANGEROUS TO DRINK WATER?

On the other hand, there are people, including some large national groups, who have the suspicion that water is harmful to health. This idea very likely arose during times when sanitation was so poor that typhoid fever, dysentery, and many other diseases were spread through impure drinking water. (See page 179 for a discussion of diseases transmitted through impure water, and how to prevent them.) When water is pure, it is perfectly healthful. There is no need to substitute wine or beer or other drinks with the idea that they will aid your health. In hot weather there is a tendency for some people to take in huge quantities of extremely cold, iced water. This may overload the stomach with too much cold fluid. It is best to take iced water and other iced drinks in small quantities.

WHEN IS EXTRA WATER REQUIRED?

In certain illnesses it is necessary to take extra water as part of the treatment and for prevention of complications. This is particularly true

for people who have a tendency to form *kidney stones*. The stones form more readily when the urine is concentrated. Therefore, doctors prescribe extra fluids to keep the urine dilute both during the day and night. Sometimes it is even necessary to take an extra glass of water during the night to make sure the urine doesn't become too concentrated during the night hours. In infections of the kidney such as *pyelitis* and *pyelonephritis*, or in infections of the urinary bladder, such as *cystitis*, extra water may be useful to help wash out the infection. In *gout* there is a tendency for the extra uric acid to precipitate in the urine. Therefore, doctors advise extra water to keep the uric acid in solution. (See page 671 for a discussion of gout.) There is a disease in which the body cannot retain water in a normal manner, and amounts of urine up to such huge quantities as 30 quarts a day are passed. This sickness is called *diabetes insipidus*. Whenever there is excessive thirst, you should tell your doctor about it because it may be a warning that some ailment has set in.

WHEN IS IT NECESSARY TO RESTRICT WATER INTAKE?

In some diseases, particularly where there is a tendency toward *edema* (see page 601), part of the treatment may consist of restricting the intake of fluid. This may be true in *heart disease* (see page 599), *cirrhosis of the liver* (see page 647), and the edematous stages of *Bright's disease* (see page 611). Actually, the *salt* in fluids other than water is more important in causing edema than the water itself.

USE OF MEDICINES, DRUGS, AND NARCOTICS

It is wise to use only those medicines your doctor recommends for you. Even vitamins such as vitamin D have caused deaths when taken too long in extremely high dosage. New preparations are always appearing, and he can advise you about the safest and best, as well as the least expensive, ones.

Most people are not harmed by *aspirin*. However, I want to caution you against using it indiscriminately, as some people do. They carry a box of tablets with them at all times, swallowing a couple of pills at the first real or fancied sign of discomfort. *Bicarbonate of soda* and other remedies for indigestion, "sour stomach," should not be taken continually, either. While there is no need to fear medicines, they should never be taken regularly unless your doctor tells you to. Pain, indigestion, and other symptoms may be nature's warning signals of disease and should not be obscured by self-medication.

Sleeping tablets should be taken only upon a doctor's prescription. In many states they cannot be obtained without one. This is a wise provision, as they can be extremely dangerous. (I discuss sleeping pills under *Insomnia*, page 732.)

Pills containing *caffeine* or *Benzedrine* to keep you from getting sleepy or to pep you up can also be very harmful.

Pain-killers like *codeine* and *Demerol* are habit-forming. Only a physician knows how the more powerful narcotics such as *morphine*, *cocaine*, and *heroin* can safely be used to relieve intolerable pain. *There is no such thing as a safe, small dose of any of these narcotics except when a doctor administers them.* Otherwise, even the most high-minded individual runs a very grave risk of becoming a "dope addict," with resulting deterioration of body and mind. For example: some years ago a group of young scientists became addicted to cocaine as a result of repeatedly experimenting on themselves in their search for a local anesthetic; only one of them, after undergoing terrible agony, was able to conquer the habit, and complete the work, eventually becoming the outstanding surgeon of his day.

As a general rule, however, people who take narcotics are unstable individuals, or are in an unstable period, usually adolescence. Often they begin with *marihuana* which, contrary to some opinions, is itself a dangerous habit-forming drug.

If you feel a desire to use these drugs, or do use them, or have used them in the past, you should talk over the matter very frankly with your doctor. He will pass no moral judgment on you, but will advise you how to prevent or to overcome the habit before it is too late. The U.S. Public Health Service runs free hospitals which treat severe cases of drug addiction. You or your doctor can obtain information about them by communicating with the U.S. Public Health Service, Washington 25, D.C.

"ONLY ONE TO A CUSTOMER"

Your body is the one "machine" which is "unconditionally guaranteed to last a lifetime."

How long and good a lifetime this will be depends a great deal on you, on whether you neglect and abuse your body out of carelessness or ignorance, or whether you treat it with the respect so wonderful an organism deserves.

CHAPTER 2

The Food You Eat

GETTING ENOUGH to eat is less of a problem in America than in most of the world, or than it has been at any other period in history. Throughout the ages the vast majority of the population seldom if ever knew what it was like not to be hungry; and in many parts of the modern world, people are little if any better off.

Yet there is more to food than the simple matter of satisfying one's hunger pangs. Some people enjoy food so much that they practically "live in order to eat." Others care little about it, and simply "eat in order to live." I have seen patients from *both* these groups whose diets are inadequate, sometimes even incompatible with good health. I am not talking about patients who are too fat or too thin—a subject I discuss fully in the next chapter—but about the people who fail to get the proper nourishment because they are not eating right. This chapter is devoted to information about good diets and eating habits for everyone.

WHEN TO EAT

We doctors advise "three square meals a day," with or without additional snacks. The latter depend on you—your weight, whether or not they spoil your appetite for the food you should have, and how much you want them. Some people are miserable when deprived of their coffee break or afternoon tea or a bedtime raid on the icebox. On the other hand, some people are undernourished because they drink countless cups of tea or coffee instead of eating regular meals, or spend restless nights because they indulge in sandwiches before going to bed.

Why *three* meals? Why not just eat when you feel like it? Mainly because it is more practical in our present civilization. (And, incidentally, some primitive people eat a morning, noon, and late evening meal.) Energy-producing foods can be spaced better when one has three meals a day; if you eat one huge meal you are apt to feel like a hibernating python when you're finished! Adhering to the custom of three meals a day makes it easier to plan an adequate diet and make sure you are getting it.

The proportionate size of the meals is up to you—whether, for example, you eat your largest meal in the middle or at the end of the day. The only point I stress is: if you have your dinner at noon, allow time enough for it. The average lunch hour isn't long enough for the trip to your home or a good restaurant, with a few stops on the way to attend to errands, *and* a hearty dinner. We doctors no longer advise people to chew each mouthful of food a specific number of times; but we do urge you not to bolt it. Chewing mixes it with saliva and gets your digestion off to a good start; and having time enough to relax encourages the whole digestive process considerably. Besides, many women would be better cooks if their families didn't gulp down their best efforts like seals being thrown a piece of fish—as a housewife complained to me recently.

HOW ABOUT BREAKFAST?

Many a patient has said to me, "I know it would be good for me, but honestly, Doctor, I just can't eat much breakfast!" She (it's usually a woman) may be right. Some people awaken slowly and painfully, and anything more than orange juice, black coffee, and a few bites of toast doesn't appeal to them. However, many people *think* they don't like breakfast simply because they've never given themselves a chance to enjoy one. Because a good high-protein breakfast makes one feel better and have more energy during the morning, I usually ask people who say they can't eat much in the morning to make the following experiment for a month. If you belong to this group, why don't you try it?

If you awaken slowly, set the alarm ahead by ten or fifteen minutes. Spend *at least* fifteen minutes every morning eating breakfast, or just sitting at the breakfast table. Try adding various things that appeal to you such as a bit of crisp bacon, a small dish of cereal, an extra piece of buttered toast, a small portion of egg, some milk.

Usually by the end of a week or two people find they are enjoying a larger breakfast. If not, I tell them to forget it; it is better to get one's extra energy from a midmorning snack than it is to force one's self to eat, or to worry about not eating a good breakfast.

If you have succeeded in eating a larger breakfast, then try to convert to a high-protein breakfast. It has been observed by medical scientists that a high-protein diet provides energy at a more uniform level throughout the morning than do other types of breakfast. The sugar in the blood doesn't fluctuate nearly as much as it does after a high-starch type of breakfast. These changes in sugar level affect your appetite and energy capacity. Also, because the appetite is satisfied for a long time thereafter by the high-protein breakfast, the actual calorie intake later in the day is reduced—thus keeping total body weight down.

For the high-protein breakfast, concentrate on *eggs; cereals and milk; meats* such as crisp bacon, ham, crisp sausages; and *milk* (use skimmed, fat-free milk if you have a tendency to overweight, p. 43). Reduce the amounts of sugary and starchy foods to a minimum, e.g., toast, jelly, marmalade, pancakes, waffles.

If you can't eat a good-sized breakfast, or if you don't eat sufficient protein, then by midmorning you may possibly feel the effect of a low blood sugar—by hunger and even sensations of dizziness and fainting. Try before this time arrives to take some solid foods and a glass of orange juice, or at least a cup of coffee and some doughnuts.

ATTRACTIVE MEALS

No one should have to force himself, or be forced, to eat at any meal. But it is not "forcing" to encourage your appetite or that of some member of your family, by giving time and thought to meals. This means not only preparing them well, but serving them in a pleasant atmosphere and making them look attractive. (Most of the cookbooks I recommend at the end of this chapter emphasize this point.) If that isn't enough to make an individual like food, a doctor should be consulted.

WHAT TO EAT

The following diet was prepared by the country's leading experts for the National Research Council. Everything necessary to health is in this daily diet. If the food you and your family eat in the course of a day includes everything listed here, you can stop worrying about vitamins and proteins, calories and minerals.

TABLE 1

MILK	1 pint (1 quart for children)
EGG	1 daily (on days not used, substitute more milk, meat, cheese, peanuts, or other protein food)
MEAT, FISH, FOWL	1 or more servings
POTATO	1 or more
VEGETABLES	2 or more servings; one green and one yellow
FRUITS	2 or more; one citrus fruit or tomato or other food source of Vitamin C
CEREALS AND BREAD	whole-grained or enriched
Sweets, fats, starchy and other foods should be added to complete the meals and to maintain normal weight.	

Unfortunately, not everyone can afford this diet, so the experts have worked out the one below for people with smaller incomes. The diet in Table 2 is less varied and somewhat less tasty than the one given in Table 1, but it is equally healthful, for it, too, contains all the vitamins, protein, and minerals needed by the body.

TABLE 2

Milk (fresh or made from evaporated or dried)	$\frac{1}{3}$ quart
Lean pork	Small servings 3 to 4 times a week
Turnip greens	1 cup
Sweet potatoes	3
Peanuts	20 nuts or 2 tablespoonfuls of peanut butter
Beans or cowpeas	$1\frac{1}{2}$ oz.
Tomatoes	1 cup
Cornmeal	3 oz.
Enriched flour	3 to 4 oz.
Augment this basic daily diet with molasses, fat, and starchy food to complete the meals and maintain normal weight.	

Your family may not like many of the items listed in these tables; and you have found that it isn't easy to change people's eating habits. I realize that, too. I have had many a patient tell me he won't eat vegetables and that salads are rabbit food. Many a woman who lives alone doesn't want to bother with anything but tea and toast, while business girls may eat practically nothing but sandwiches, coffee, and sodas. Don't try to change eating habits—your own or those of others—in a tactless manner. Use ingenuity: if someone won't drink milk, see that he or she gets the required amount in puddings, soups, cheese, and the many other foods that can contain milk products.

Tastes vary according to national and regional customs. Some people of Italian descent eat spaghetti almost every day, while in parts of the United States dinner consists of meat and potatoes, bread and butter, and pie. Every group has some justification for thinking its dishes are the best in the world. Many of them are, indeed, excellent, and all customs need not be changed. I wouldn't think of saying that rye bread, which Slavic people prefer, is a better source of cereal carbohydrate than spaghetti, or vice versa.

However, it is important to realize that many groups ate certain food almost exclusively (rice, for example) because they couldn't get anything else. Here in the United States we need not limit ourselves. A tremendous number of foods are easy to obtain here, and equally inexpen-

sive, because of transportation, refrigeration, and canned and frozen foods. The many national groups that have contributed to the melting pot of American cookery have made it possible to enjoy the best and most varied dishes in the world. A restaurant in the United States may serve French onion soup or Russian borscht, lamb cooked with vegetables in the Greek, Armenian, or Turkish manner, American corn-on-the-cob, Chinese chop suey, East Indian curried rice, or Hungarian goulash.

Tastes in eating grow and develop. But again—be tactful in your approach if you want to encourage change. Don't try something "too queer," like Japanese-style raw fish. Introduce something new as a side dish rather than as the main course. A little experimenting with some of the slightly Americanized versions of inexpensive national or regional specialties may help to broaden the eating habits of your family.

If you still aren't able to include the required items in your diet, it is probably because of lack of money. In that case, the first thing to do is to go over your budget carefully. Clothes, entertainment, and the car often demand too large a portion of the family income. Money spent on soft drinks, candy, and sodas do not give you their money's worth in food value if substituted for protein foods.

You may also be able to learn some new tricks for stretching your food dollar. If, after trying the suggestions in the following section, your diet still doesn't come up to the recommended ones, you need outside assistance. Ask your local health department or your community services headquarters whether they can refer you to an agency or a trained social worker who can go over your problem with you and make certain you are providing the best that can be managed on your income. If you still can't purchase the things on the recommended diet, you need financial help from your community. *Don't be reluctant to ask for it.* It is far better to accept some assistance now than to injure your health and that of your family so that you will need greater assistance later. *No one should be exposed to the slow starvation which results from a substandard diet.*

HOW TO MAKE THE MOST OF YOUR FOOD DOLLARS

DON'T WASTE FOOD

Many foreigners insist they could live on the food which we Americans throw into our garbage cans! Stop and think before you empty anything into yours. Don't pour the liquid from canned vegetables down the sink;

it is rich in minerals and vitamins. Boil it down as rapidly as possible to one-half or one-quarter of its original volume, then add the vegetables and heat for serving. Or use the liquid to make valuable soups. The best stews are often made from left-overs. Don't pare away the best part of your vegetables and potatoes; leave the skins on or scrape away the outer surface (a pot cleaner is good for this).

Don't let food spoil. It is cheaper to buy nonperishable foods in bulk if your storage space permits, but it isn't economical to buy a bargain-lot of perishable foods and then throw most of them away.

Perishable foods. Meat, fish, cheese, etc. must be kept cool. Fruits and vegetables lose some of their vitamin content as well as their palatability if allowed to become stale. The wise housewife plans her menus for several days ahead and buys just enough of the perishable items for immediate use. Even food in cans will eventually deteriorate if exposed to high temperatures, that is, near hot pipes or radiators or directly under noninsulated roofing.

Modern refrigerators will more than pay for themselves in the saving of food. Electric, gas, and solid-ice refrigerators are all efficient if serviced regularly. Deep-freeze units are usually economical only for large families or families that entertain a good deal.

Moist or liquid foods spoil most rapidly. Bacteria, yeasts, and molds from the air can contaminate them. This process goes like wildfire if the liquid or moist food is slightly warm, the temperature which most microbes like best. Since bacteria do not thrive in cooler temperatures, these foods should be kept cooled or refrigerated. Milk must be guarded more carefully than almost any other food. It should be cool when it is delivered to the home or taken from the store, and it should not be allowed to sit around on porches or in halls for several hours getting warmed up before it is put into the cooler or refrigerator. It spoils if left in the sun, and may even be dangerous to use because of the increased number of bacteria in it. Exposure to light also destroys some of its precious vitamin B.

It is perfectly safe to keep canned foods in the icebox after they have been opened. Many people still believe that canned goods must be put into a dish or discarded in order not to risk getting "ptomaine poisoning." Modern cans are perfectly safe; food may be left in them in the refrigerator. Some foods such as tomatoes and pineapple take on a slightly metallic taste after a few days in an open can, but they may be eaten without harm.

We used to hear a great deal about "ptomaine poisoning," a diagnosis made on the incorrect theory that mysterious poisons were created by the

digestion of certain foods. However, certain kinds of *food poisoning* do occur. They can be caused by the contamination of food at its source, as, for example, milk from a diseased cow, oysters from a polluted bed, or vegetables fertilized by human manure; by food that has spoiled, lobsters, for example; or by the contamination of food during its preparation. Dysentery and typhoid fever have been spread in the last manner, perhaps by a cook who was suffering from the disease or who happened to be a carrier—that is, one of the rare individuals who can harbor and pass on a certain germ without being made ill by it himself. A baker with a sore on his hand might introduce bacteria from it into food—perhaps cream puffs or custard pies, which make excellent breeding spots for such microbes, especially in hot weather.

People who eat foods such as I have described are apt to get sick; but if the condition is treated in time the mortality is very low. Therefore it is important to see the doctor immediately if you suspect food poisoning. Fortunately, our public-health officials do an excellent job of inspecting our water, milk, and food supplies to make certain they are safe. You can do your share by not buying food that has spoiled, particularly meat, fish, and shellfish, or by not serving it if it “goes bad” after being purchased. If you can’t be certain from its appearance whether or not food is safe to eat, smell it; usually “your nose knows.” Be sure that you, and anyone else who handles the food you eat, observes the obvious rules of cleanliness. Don’t let food stand around all day on the back of the warm stove where any germs that fall on it will flourish. If food should cook a long time, let it *cook*—heat destroys germs—and not just sit. Home canning must be carried out properly to avoid botulism.

Poisoning by *inedible berries*, *toadstools*, etc. is discussed on pages 212. It can easily be avoided by purchasing your food at the store, or *really* knowing what you are about. (Your experiences in Scout camp do not, for example, enable you to pick “mushrooms” for dinner!)

OTHER DOLLAR STRETCHERS

Gardening, and the home canning of fruits and vegetables purchased when they are at their cheapest, will help make your food budget cover your needs. It takes very little space to grow a few tomato plants, and even a window box will do for chives and herbs that can transform dull, inexpensive dishes into tasty ones. You can learn how to utilize inexpensive cuts of meat which are just as good for you as expensive ones (see Table 3). Cheese is a good, inexpensive meat substitute, and so are baked beans and lentils. Canned or powdered milk can be used instead of fresh, and margarine, which is “fortified” with vitamins, is as good as butter.

TABLE 3

SOME LESS EXPENSIVE SOURCES OF PROTEIN FOODS

MEATS	FISH IN SEASON
Short ribs of beef	FOWL
Lamb and beef stew meat	DRIFD PEAS AND BEANS
Beef chuck roast	LENTILS
Livers	SOY BEANS
Hearts	POWDERED MILK
Tongues	
Kidneys	
Brains	

Perhaps you are spending too much of your food money on tea or coffee. These beverages are pleasant and, although they contain a stimulant, caffeine, they are usually harmless to adults, in moderation. (See page 18.) However, these beverages are expensive and they are *not actually food*.

The following pamphlets contain valuable money-saving information. Send for them.

Buying Guide to the Thriftier Cuts of Meat,

American Meat Institute, 59 E. Van Buren Street, Chicago 5, Ill.

Diets to Fit the Family Income, Carpenter and Stiebeling,

Human Nutrition Research Branch, Agricultural Research Service, U.S. Department of Agriculture, Washington 25, D.C.

Planning Diets by the New Yardstick of Good Nutrition,

Human Nutrition Research Branch, Agricultural Research Service, U.S. Department of Agriculture, Washington 25, D.C.

National Cannery Association pamphlets,

1133 Twentieth Street, N.W., Washington 6, D.C.

Manual for high school teachers on commercially canned foods,

American Can Co., 100 Park Avenue, New York 17, N.Y.

SPECIAL DIETS

DIET FOR CHILDREN

The formula for infants should be prescribed by your doctor or hospital clinic, who will tell you when to supplement it with cereal, vegetables, egg, and so on, and how much cod-liver oil, orange juice, or vitamin concentrates to give (See chapter on child care, page 383).

From the time the doctor says your child can eat everything, his diet can be much the same as that of the adult given in the preceding pages,

except that (1) the child needs a quart of milk a day, and (2) he may need "pick-me-ups" between meals to supply extra energy. Bread or crackers covered with cheese, butter, or jam; ice cream; cocoa and chocolate milk are good for this purpose. (However, read my remarks on sweets and tendency toward tooth decay, page 76.)

DIET FOR THE ADOLESCENT

During their rapid growth in adolescence, boys and girls need extra milk, proteins, and vitamins. It is essential that they eat the balanced diet listed at the beginning of this chapter. They need extra food and milk drinks between meals to add poundage to the lengthening body. Good dietary habits are especially important at this age as explained in my chapter on Adolescence, page 440.

DIET DURING PREGNANCY

The pregnant woman must supply her own body with proper food, and at the same time eat foods to build the baby's bones and tissues. This means that extra minerals, proteins and vitamins are needed. The diet during pregnancy should be regulated by a physician, which is one of the reasons why every pregnant woman should be under the care of a doctor. (See chapter on Pregnancy, page 321.)

DIETS FOR THE LATER YEARS OF LIFE

The elderly person needs the well-balanced, basic diet I have described (page 25). Many doctors feel that older people benefit from additional vitamins. These can be obtained from natural sources by taking a glassful of orange or tomato juice *each day*, and a daily teaspoonful of cod-liver oil. A serving of liver and a pork chop *each week* will add the vitamin B group. These extra vitamins can also be taken in capsule or concentrated form. Let your doctor decide what is best for you. He will probably caution you against gaining weight, and you will undoubtedly want to read my next chapter on Overweight and Underweight. You will also want to read the chapter on Aging, page 788).

WHY YOU NEED A BALANCED DIET

So far, this chapter has consisted almost entirely of "what to do" and has said almost nothing of "why to do it." This is because I want to pro-

vide workable rules and ready facts about foods for the many people who "aren't interested in proteins, vitamins, calories, and so on," but do want to eat the proper foods. The following section of this chapter is written for those of you who would like to know *why* a diet must be scientifically balanced.

Food provides the body with four essentials:

1. energy
2. repair materials
3. growth materials (from infancy through the period of active growth)
4. vitamins and other special substances.

The largest solid parts of the body are the muscles and bones. This framework must be built out of food, mostly from proteins and minerals. The muscles, heart, liver, kidney, and other organs are composed chiefly of proteins. The child and the growing adolescent need plenty of proteins to build up the muscles and vital organs. Meat, fish, milk, and eggs are among the main sources of protein in our diet. Even after the period of growth is over, the body tissues, which are continually being worn out, must be replaced with new materials. That is why adults, as well as children, must have ample protein in their diets. Lacking protein, the body becomes weakened and exhausted, with lowered resistance especially to infections. Certain other conditions can result from "protein starvation." I shall never forget one such case I saw because the patient was a nurse who certainly should have known better! She was working very hard in a doctor's office, and foolishly existed on jelly sandwiches, cokes, and black coffee—which caused her to develop *starvation edema*!

In addition to the organs and muscles, the body must build its solid framework of bones. They are composed chiefly of the mineral substances calcium and phosphorus. The best source of these two minerals is milk, either fresh or canned, dried, skimmed, or whole. Milk is a splendid, all-round food because it is rich in both minerals and proteins. Other good sources of calcium are:

American and Swiss cheese
Molasses
Turnip tops, dandelion greens

Other good sources of phosphorus are:

Cereals
Meat, fish

Minerals and proteins build the bones and flesh. But what supplies the energy? An automobile cannot go without gasoline, no matter how good

an engine it has, nor can a stove or furnace operate without fuel. The fuel of life is sugar (carbohydrates). Starches are converted into sugar in the body, and the sugar is burned—metabolized—to supply energy.

Sugary and starchy foods provide ready energy. Children need extra carbohydrates between meals to keep them supplied with fuel for the tremendous amount of activity they indulge in. Anyone doing hard physical labor requires plenty of energy-giving foods such as bread, pancakes, syrup, jelly, honey, and sugar. (Scientific tests indicate that boys of thirteen or so can “use up” as much food as a lumberjack does—which will come as no surprise to most mothers!)

Fat and protein can also be used to provide energy, and these the body can store up to use as reserves. For that reason Eskimos and others who eat proteins and fats almost exclusively at certain seasons of the year do not have “stalled engines” during these periods. However, starches and sugars act more promptly in providing energy than do proteins and fats.

Usually your appetite will tell you just how much food your body needs. This indicator is so sensitive that some people go for years at almost precisely the same weight. If more food is taken in than is needed for fuel, building, and repair, the body stores it as fat. If too little food is consumed, the body burns its reserves of fat and protein. Neither of these conditions is desirable, and I explain how to avoid or correct them in the next chapter.

CALORIES

A calorie is a *unit of measurement* of the energy value of food. It represents the energy for heat and physical work which can be obtained from a certain weight of food. A pound of fat in butter or meat equals 4,000 calories. If—to cite an extreme case—a person consumed 4,000 more calories a day than he needed, the body would have to dispose of them. It could do so by laying down a pound of fat in the abdominal wall and elsewhere! On the other hand, if the food consumed each day were not enough to furnish heat and energy, the individual would have to “burn up” a part of his own body fat or tissues.

Fever or an overactive thyroid gland (increased basal metabolism: see page 93) cause the body to use more calories, and may necessitate feeding high-calorie diets, rich in concentrated foods such as sugars and fats.

The calories, or energy from food, needed per day by persons engaged in different types of activity are shown on page 34. They indicate the number of calories required to maintain weight.

<i>Occupation</i>	<i>Calories Required</i>
Secretary or office worker	2,000
Housewife	2,500-3,000
Factory worker	3,000-4,000
Farmer, laborer, or lumberjack	4,500-5,000

It is evident that the farmer needs a different amount of food than does the secretary. He will have to eat a number of extra slices of bread, pancakes, or other sweet or starchy foods to make up the difference in the "gasoline" he burns each day. Yet both the farmer and the secretary require the *basic, essential foods*—*proteins, minerals, and vitamins*.

All this information about protein foods for tissues and muscles, minerals as bone builders, and sugars and starches for fuel seems complicated enough. Yet we have to go still further.

VITAMINS

Vitamins are important substances found in various foods. They are necessary for growth and health. Without them, many serious conditions can arise: we call these *deficiency diseases*.

Some of these diseases have been recognized for centuries. The disease known as *scurvy* was a familiar one to seafaring people for hundreds of years before they suspected it had anything to do with the diet on which sailors had to exist when they went on long voyages. Scurvy made them weak, caused their gums to bleed and their teeth to fall out, made their muscles ache, and eventually ended in death. About two hundred years ago, Dr. Joseph Lind, a British naval surgeon, found that the juice of citrus fruits would cure or prevent scurvy. Lime juice was subsequently carried on British ships so that sailors could have some every day, with the result that scurvy was eliminated—and British sailors came to be known as "limeys." Now we know that the value of the juice was in the *vitamin C* which citrus fruits contain.

Lack of *vitamin A* causes poor vision in dim light (called "night blindness"). Without *vitamin D* the bones fail to harden properly, causing *rickets*, one result of which we could see in bowlegs, from which so many children used to suffer. Lack of *vitamin B* causes several diseases such as beriberi and pellagra. Victims of this latter deficiency disease are weakened to the point of helplessness, their minds frequently being affected. *Pellagra* is widespread in certain poverty-stricken areas where the people have to exist on a monotonous diet: for example, the sharecroppers in the South. However, it is not limited to any group. Some years ago the son of a well-to-do family was referred to the hospital with

which I was associated; his poor school record had led his teachers to believe he was mentally retarded. Fortunately he was given a complete checkup which revealed—perhaps the last thing a doctor would have suspected—that he was suffering from pellagra. It was then discovered that his father, who had undergone several stomach operations and had been limited to a diet consisting of soups and gruel, had decided this diet would be good for his son if it was good for him, and had limited the boy to the same fare!

In addition to these striking deficiency diseases, lack of vitamins can cause milder disturbances that are more difficult to detect. Both the mild and the severe cases can be prevented by a balanced diet which contains all of the vitamins.

It is necessary for us to get our vitamins from foods because the human body cannot manufacture them—with the exception of *vitamin D*. Our bodies can make this when sunlight falls on the skin. However, we seldom can manufacture enough *vitamin D* all through the year, especially those of us who work indoors or live in the North. So we must obtain *vitamin D*, too, in our food.

The following table shows some good sources of each of the principal vitamins:

Vitamin A

Vegetable greens, e.g., beet, kale, chard, mustard, spinach, turnip
 Yellow vegetables, e.g., carrots, yellow squash, sweet potato
 Beef liver
 Cod-liver oil; halibut-liver oil

Vitamin B

(The vitamin B family consists of several vitamins, including thiamine, niacin, etc.)
 Liver, pork, beef, salmon
 Whole-wheat bread, enriched bread, cereals, e.g., oatmeal
 Peanut butter, peanuts

Vitamin C

Citrus fruits—oranges, lemons, grapefruit, limes
 Tomato juice (fresh or canned)
 Strawberries, raspberries, gooseberries, currants

Vitamin D

Halibut-liver oil and other refined fish-oil preparations
 Vitamin D milk

Exposure to sunlight (not sufficient alone, especially for dark-skinned people. Sunlight through glass will not make vitamin D.)
(Concentrates of vitamin D are frequently prescribed by doctors for children.)

"But why should I bother with this chart?" you may ask. "Why shouldn't I just buy my vitamins at the drugstore?"

In the first place, it is more expensive. No one should spend money to purchase only vitamins if it is needed to buy foods which contain other essentials in addition to the vitamins in them. In the second place, there is still no guarantee that all the purified vitamins known at present to medical science are as good as those which nature provides. So don't buy vitamin pills, capsules, or other products unless your doctor says you need some concentrated supplements.

OTHER DIETARY REQUIREMENTS

In addition to vitamins, the body needs small amounts of other valuable materials. Only a small fraction of an ounce of *iron* is required, but without this the body develops a form of anemia. The blood's rich redness is produced by hemoglobin containing iron and protein. *Foods rich in iron include:* kidney and navy beans; liver and other meats; turnip tops, beet greens, and spinach; whole-wheat bread; molasses. A trace of *iodine* is necessary to prevent goiter; this can easily and safely be obtained by always using iodized table salt. Small quantities of *magnesium, manganese, copper*, and other substances are necessary. Nature provides them in balanced diets.

Salt. The body requires salt (sodium chloride). This is obtained in sufficient quantity from the average diet, except when a person sweats profusely. Salt is lost in the perspiration, and during hot summer days everyone, especially workers, athletes, and lively children, should have more than their usual amount of salt. They can salt their food liberally or take salted nuts, crackers, or add salt to tomato juice. Workers in steel and similar industries should add $\frac{1}{4}$ teaspoonful of salt to each glass of water they drink during days when they perspire excessively. If salt tablets are taken, they should be specially coated ones which do not irritate the stomach.

FOOD FADS

VEGETARIAN DIETS

There are three types of "vegetarian" diets: (a) the strictest, which excludes all animal products in addition to the flesh and organs of all animate creatures; (b) the intermediate, which permits the eating of such animal products as milk, cheese, eggs, etc.; (c) the mildest, which permits the eating of fish and shellfish in addition to dairy products.

We doctors have been unable to find any virtue in vegetarian diets, except for the fact that people who adhere to them are apt to be lean, which is usually a good thing. For every vegetarianist who attributes his healthy old age to his diet, we have seen an even older person who gives credit to something else, perhaps the fact that he eats beef every day.

Vegetarian diets, particularly of type (a), can be harmful because they lack sufficient protein, which, as I explained on page 32, is essential for adults as well as children.

DIETS AS CURES

We constantly hear about diets which will "prevent acid or alkaline stomach," cure constipation, skin disease, cancer, high blood pressure and tooth decay, or "increase virility and guarantee long life." Some of these systems are advocated by quacks; some by reputable physicians who become unduly optimistic and fail to test their theories sufficiently. (Many of us remember Dr. Elie Metchnikoff, one of the great pioneers in bacteriology, who was convinced that drinking sour goats' milk would tremendously extend the span of human life. Thousands of people followed his advice, to no avail.)

Some diets are sound. For example, a special diet is essential in certain diseases such as diabetes. Other diets may be helpful in constipation, anemias, acne, and so on.

Nevertheless, I wouldn't think of saying that everyone with a poor complexion should cut out sugars, starches, and fats, or that people with a low hemoglobin count should eat additional portions of liver. Before I recommended such diets, I would find out what was causing the condition: the anemia could be due to the constant loss of blood from hemorrhoids (piles) and the poor complexion might be an allergic reaction to some scented soap. I wouldn't tell an adolescent who was underweight to eliminate fats and carbohydrates from his diet. Similarly constipation can be caused by many things other than insufficient bulk in the diet, and the "roughage" advocated to remedy this situation would be harmful to anyone suffering from, or having a tendency to, colitis or

ulcers. Cutting out meat in order to reduce high blood pressure may result in an insufficient protein intake, or in the substitution of fattening foods with a consequent gain in weight that might be harmful.

I have mentioned just a few of the many examples I might give, in order to show you why it isn't safe for you to adopt a special diet on your own. (High blood pressure is discussed fully on page 606, constipation on page 746, dyspepsia—indigestion—on page 120, allergies on page 739, and anemias on page 703.)

If you need a special diet, your doctor will tell you so, making certain it is good for *you* and not just for a possibly imaginary symptom. The diets outlined in Tables 1 and 2, pages 25 and 26, provide everything the healthy person needs to keep in good health. Don't try anything else without consulting your physician, even though a doctor may have prescribed it for some friend of yours for whom it has done miracles. Remember that the diet prescribed for the man I mentioned earlier caused his young son to suffer from pellagra. The old saying "one man's meat is another's poison" has some truth to it.

SOME MISCELLANEOUS FOOD FACTS

Don't worry about "mixing" foods. There is no truth to the old superstition that something terrible will happen when "acid" and "alkaline" foods get together in your stomach, or that you are bound to get sick if you have lobster and milk at the same meal, or ice cream and cherries. I can find no scientific basis for the Orthodox Jewish interdiction of the simultaneous use of meat and dairy foods. (On the other hand the Mosaic Law was very sound in the attitude toward pork, the washing of hands before eating, and the killing of animals intended for human consumption.)

You may react violently to certain foods because you are allergic to them (see page 742). However, some foods may "disagree" with you because of an association; for example, one patient of mine says he is always nauseated by orange juice because his parents used to give him foul-tasting castor oil in it, while another can't eat shrimp salad because her attack of acute appendicitis followed a luncheon at which that was the main dish. You yourself know best whether to try to overcome the aversion or to avoid the food.

Seasonings don't injure foods. The danger from highly seasoned foods in the past came from the fact that the seasonings were often added to hide the fact that the food had spoiled. The new meat tenderizers and flavorizers apparently do not injure the foods in any way.

There is no basis for such superstitions as that eating oysters will increase virility, or that fish is "brain food."

You don't need to cut down on the quantity of food that you eat in the summer, unless, of course, you cut down on your activity and don't want to gain weight. But foods won't "thicken" or "heat" the blood.

WHAT DOCTORS DON'T KNOW ABOUT FOOD

Despite all that has been discovered about food, there is still a great deal to be learned. Scientists are constantly investigating the relationship between what we eat and our general physical and mental health. A new vitamin might be discovered at any time, or the special value of some humble food item. Because we doctors don't know everything about food, I urge my patients to make certain they are getting the basic requirements given in the tables at the beginning of the chapter, and also to branch out as much as they can with sea foods, etc., so they will be apt to include all foods which may happen to be particularly valuable.

EAT RIGHT AND LIKE IT

As a physician who happens to enjoy food, I want everyone to get pleasure as well as nourishment from eating. Good meals needn't cost more or take longer to prepare than poor ones. Combining two different kinds of canned soups, for example, is no more trouble than serving your family two cans of the same variety. Herbs and seasoning help tremendously at the cost of very little time and money. Why not start collecting recipes or look at the cookbooks listed below (they can often be found in libraries) so that the food you eat will be good—as well as good for you?

GOOD BASIC COOKBOOKS

America's Cook Book

Charles Scribner's Sons

Better Homes and Gardens New Cook Book

Better Homes and Gardens

Betty Crocker's Picture Cook Book

McGraw-Hill Book Co., Inc., and General Mills, Inc.

The New Fannie Farmer Boston Cooking-School Cook Book

Little, Brown and Company

The Settlement Cook Book, by Mrs. Simon Kander
Simon and Schuster

Toll House Cookbook, by Ruth Wakefield
Little, Brown and Company

Parents Magazine Family Cookbook, by Blanche Stover
McGraw-Hill Book Company, Inc.

Paperbound Books

Fannie Farmer's Handy Cook Book
Signet

The Pocket Cook Book, by Elizabeth Woody
Pocket Books, Inc.

CHAPTER 3

Underweight and Overweight

SOONER OR LATER almost everyone is faced with the problem of losing or gaining weight—or, at the least, wonders whether he or she ought to diet. Medical statistics show that 2,500,000 individuals in the United States actually consulted doctors during one year recently to ask for help in reducing. Scientific estimates indicate that in this country one-fifth of the people over thirty years of age, and undoubtedly a large number of younger people, are overweight.

WEIGHT DOES MAKE A DIFFERENCE

Anyone who is markedly under or overweight is suffering from a kind of illness; at any rate, he has received a Danger Signal. *The obese (overweight) person* may suffer from one or more of the following: (1) an overworked heart and circulation, (2) shortness of breath, (3) a tendency to high blood pressure, (4) a tendency to diabetes, (5) poor adjustment to hot weather and changes of temperature, (6) increased strain on joints and ligaments, often leading to chronic back and joint pains, (7) reduced capacity for physical exertion and sometimes for mental work, (8) increased susceptibility to infectious disease, and (9) personality problems due to poor appearance.

Surely such a person cannot be enjoying good health. And the final proof comes from incontestable medical evidence which shows that *overweight shortens the span of life itself*. For example, the mortality from circulatory conditions is 44 per cent higher in males who are five to fifteen per cent overweight than it is in men whose weight is what it ought to be. "The larger the waistline, the shorter the life-line."

I know people who have taken this so seriously that dieting is practically the most important thing in their lives—sometimes when their weight is perfectly compatible with health. On the other hand, I've had patients dismiss it as nonsense, informing me that it is natural for them to be fat or thin, and they don't think it makes any difference anyway. Of course I tell them they are mistaken.

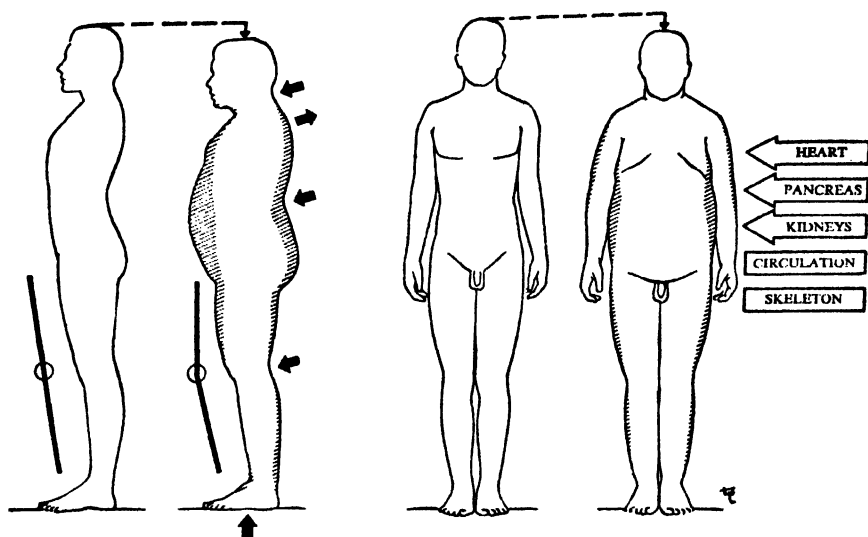


Illustration 3-1. OBESITY.

Note the decrease in height due to increased weight. **LEFT:** The black arrows indicate the location of the most severe skeletal strain. **RIGHT:** The organs most severely affected.

We should regard obesity as a potentially serious type of illness, not as a matter for jokes and ridicule.

People who are markedly *underweight* are in less danger, provided, of course, that their condition is not due to illness. However, they often lack energy, endurance, and resistance to infection, being more susceptible to illnesses such as tuberculosis, especially when they are young. To be “skinny” is not funny, either.

Obviously, people in these two groups don’t look as well as they would if their weight were normal, and appearances, as well as health, contribute to happiness and success.

DOES THIS MEAN YOU?

Your doctor can answer this question better than anyone else. Usually your mirror has provided you with a pretty good clue. Consult Table 4 and Illustration 3-2 to determine whether or not your eyes have been deceiving you.

TABLE 4
DESIRABLE WEIGHTS FOR MEN AND WOMEN
Weight in Pounds According to Frame
(as ordinarily dressed, including shoes)

		MEN		
<i>Height</i> <i>(with shoes on)</i>		<i>Small</i>	<i>Medium</i>	<i>Large</i>
<i>Ft.</i>	<i>In.</i>	<i>Frame</i>	<i>Frame</i>	<i>Frame</i>
5	2	116-125	124-133	131-142
5	3	119-128	127-136	133-144
5	4	122-132	130-140	137-149
5	5	126-136	134-144	141-153
5	6	129-139	137-147	145-157
5	7	133-143	141-151	149-162
5	8	136-147	145-160	153-166
5	9	140-151	149-160	157-170
5	10	144-155	153-164	161-175
5	11	148-164	157-168	165-180
6	0	152-164	161-173	169-185
6	1	157-169	166-178	174-190
6	2	163-175	171-184	179-196
6	3	168-180	176-189	184-202
		WOMEN		
4	11	104-111	110-118	117-127
5	0	105-113	112-120	119-129
5	1	107-115	114-122	121-131
5	2	110-118	117-125	124-135
5	3	113-121	120-128	127-138
5	4	116-125	124-132	131-142
5	5	119-128	127-135	133-145
5	6	123-132	130-140	138-150
5	7	126-136	134-144	142-154
5	8	129-139	137-147	145-158
5	9	133-143	141-151	149-162
5	10	136-147	145-155	152-166
5	11	139-150	148-158	155-169

(From "Overweight and Underweight," Metropolitan Life Insurance Company.)

Unlike some tables, this one does not give *average* weights but, rather, the *desirable* weight for you. The average person tends to become fat with the passing of the years, and this is most undesirable.

You will notice that there is an allowance of about ten pounds in each ideal weight group. If you have dropped or risen a few pounds above or below these limits, discuss the matter with your doctor at your next visit. If you vary *fifteen* or more pounds from the given limits, *make an ap-*

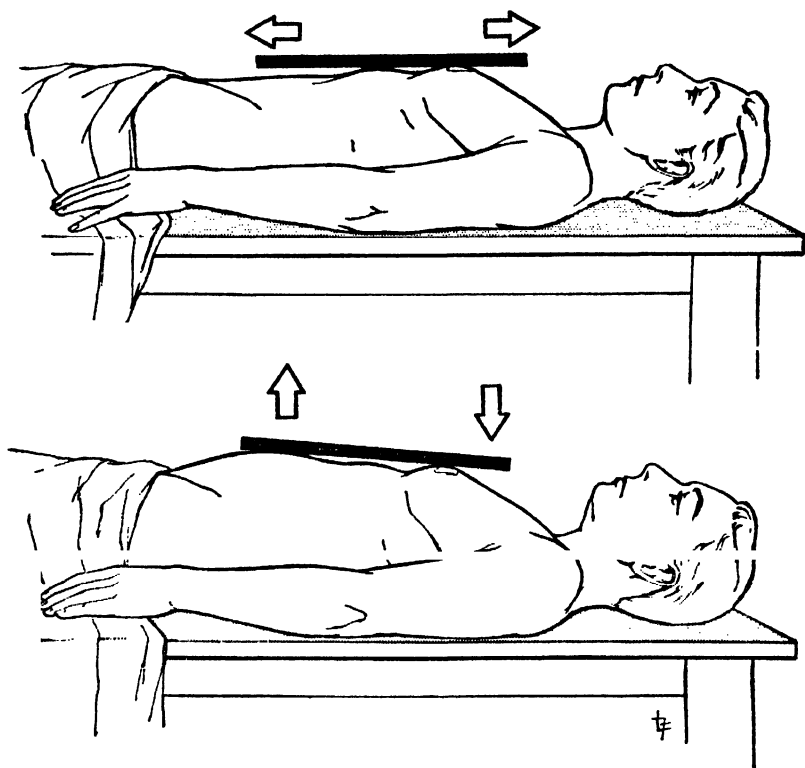


Illustration 3-2. INDICATION OF OBESITY IN MEN.

UPPER: The board is level, indicating normal weight. **LOWER:** The board is raised by the man's abdomen, indicating obesity.

pointment for an immediate checkup. The older you are, the more important it is for you not to be overweight. The younger you are, the more dangerous it is to be underweight.

CAN SOMETHING BE DONE ABOUT YOUR WEIGHT?

Practically everybody can achieve and maintain an ideal weight. Don't delude yourself with the excuse that you have inherited your fat or your thinness; don't pay any attention to the stories you have heard about glandular or metabolic disturbances. We doctors find that most of these stories are untrue.

A large proportion of the patients with whom I discuss the problem of dieting assure me that there must be something wrong with them, hoping to have it confirmed by a metabolism test (see page 95). They are often incredulous and sometimes indignant when I tell them that the only thing wrong about them is the amount or kinds of food they eat.

It is true that a few diseases can be responsible for overweight or underweight. Certain glandular disturbances can affect the appetite or influence the *distribution* of fat. But a healthy individual gains or loses weight in direct relation to the *amount and kind of food eaten*, and the *amount of energy expended* in his physical activity.

FOOD AND WEIGHT

The body burns food to provide heat and energy (in addition to using it for the growth, building, repairing, protecting, and regulating of the body, as described in the previous chapter). The harder we work, the more food we require, just as an automobile consumes more gasoline when going fast or going uphill, and a stove has to be stoked more often on a cold day than on a warm one. The work or energy which can be obtained from food is measured in *calories*. A lumberjack may expend as many as 6,000 calories a day when he is working; a stenographer or other sedentary worker, only 2,000. If the stenographer ate as much as the lumberjack, she would take in a great deal of food which the body would store as fat; if the lumberjack limited himself to the stenographer's diet, he would shrink away to skin and bones.

However, quality as well as quantity counts. Some foods contain far more calories than others, as you will see by consulting Table 5.

TABLE 5
CALORIE CONTENT OF FOODS AND BEVERAGES

<i>Foods</i>	<i>Amount</i>	<i>Calories</i>
<i>Soup</i>		
Bouillon or consomme	1 serving	25
Cream soups	1 serving	150
Split-pea soup	1 serving	200
Vegetable-beef or chicken	1 serving	70
<i>Meat and fish</i>		
Beef steak	4" x 2¼" x 1", 3 oz.	300
Roast beef	average portion, 3 oz.	300
Ground beef	1 patty, 3 oz.	250
Roast leg of lamb	average portion, 3 oz.	250
Rib lamb chop	1 medium	130
Loin pork chop	1 medium	235

TABLE 5 (Continued)

<i>Foods</i>	<i>Amount</i>	<i>Calories</i>
Ham, smoked or boiled	2 slices	240
Bacon	2 strips	100
Frankfurter	5½" x ¾"	125
Liver, tongue, kidney	average portion	150
Chicken	average breast, 6 oz.	190
Turkey	3 slices or 3½ oz.	200
Salami	2 slices or 2 oz.	260
Bologna	4 slices 4½" x ⅛" or 4 oz.	260
Tuna fish, canned, drained	½ cup	160
Salmon, drained	⅔ cup	140
Sardines, drained	10 sardines or 4 oz.	260
Shrimp, canned	4 to 6	65
Fish (cod, haddock, mackerel, halibut, white fish), broiled or baked	average portion	190
Whole lobster	1 lb.	145
Trout	average portion	250
<i>Vegetables</i>		
Asparagus	6-7 stalks	20
Beans, green	½ cup	18
kidney	½ cup	335
lima	½ cup	125
Beets	½ cup	35
Broccoli	1 large stalk	30
Cabbage, raw	½ cup	12
cooked	½ cup	20
Carrots	1 medium or ½ cup	25
Cauliflower	½ cup	15
Celery	1 large stalk	7
Corn	5" ear or ½ cup	85
Cucumber	½ medium	5
Eggplant	2 slices or ½ cup	25
Green pepper	1 pepper	20
Lettuce	3 small leaves	3
Peas	½ cup	55
Potato, sweet	1 medium	200
white	1 medium	100
Potato chips	10 chips	100
Radishes	2 small	4
Spinach	½ cup	25
Squash, summer	½ cup	15
winter	¼ cup	45
Tomatoes, raw	1 medium	30
canned or cooked	½ cup	25
<i>Fruits</i>		
Apple	1 medium	75
Applesauce, unsweetened	½ cup	50
sweetened	½ cup	95

Apricots, raw	2 to 3	50
canned or dried	halves, 4 to 6	85
Avocado	½ small	250
Banana	1 medium	130
Cantaloupe	¼ medium	35
Cherries, fresh	15 large	60
canned, syrup pack	½ cup	100
Cranberry sauce	½ cup	250
Fruit cocktail, canned	½ cup	90
Grapefruit	½ medium (4¼" diameter)	70
Olives	1 large	8
Orange	1 medium	70
Peach, fresh	1 medium	45
canned, syrup pack	2 halves, 1 tbsp. juice	70
Pear, fresh	1 medium	60
canned, syrup pack	2 halves, 1 tbsp. juice	70
Pineapple, canned	1 slice	40
Plums, fresh	2 medium	50
canned, syrup pack	2 medium	75
Prunes, cooked with sugar	5 large	135
Raisins, dried	½ cup	200
Tangerine	1 large	45

Cereal, bread, and crackers

Puffed wheat	1 cup	45
Other dry cereal	average portion	100
Farina, cooked	¾ cup	100
Oatmeal, cooked	1 cup	135
Rice, cooked	1 cup	200
Macaroni or spaghetti, cooked	1 cup	200
Egg noodles, cooked	1 cup	100
Flour	1 cup	400
Bread, white, rye, or whole wheat	1 slice	70
Ry-Krisp	1 double square	20
Saltine	1 cracker 2" sq.	15
Ritz cracker	1 cracker	15
Biscuit	1 biscuit, 2" diameter	110
Hard roll	1 average	95
Pancakes	2 medium	130
Waffle	1 medium	230
Bun—cinnamon with raisins	1 average	185
Danish pastry	1 small	140
Muffin	1 medium	110

Dairy products

Whole milk	1 cup	170
Evaporated milk	½ cup	175
Skim milk	1 cup	90
Buttermilk (from skim milk)	1 cup	85
Light cream, sweet or sour	1 tbsp.	30
Heavy cream	1 tbsp.	50

TABLE 5 (Continued)

<i>Foods</i>	<i>amount</i>	<i>Calories</i>
Whipped cream	1 tbsp.	50
Ice cream	$\frac{1}{6}$ qt.	200
Cottage cheese	$\frac{1}{2}$ cup	100
Cheese	1 oz. or 1 slice	100
Butter	1 tbsp.	100
	1 pat	60
Egg, plain		75
fried or scrambled		110
<i>Cake and other desserts</i>		
Chocolate layer cake	$\frac{1}{12}$ cake	350
Angel cake	$\frac{1}{12}$ cake	115
Sponge cake	2" x 2 $\frac{3}{4}$ " x $\frac{1}{2}$ "	100
Fruit pie	$\frac{1}{6}$ pie	375
Cream pie	$\frac{1}{6}$ pie	200
Lemon meringue pie	$\frac{1}{6}$ pie	280
Chocolate pudding	$\frac{1}{2}$ cup	220
Jello	1 serving ($\frac{1}{5}$ package)	65
Fruit ice	$\frac{1}{2}$ cup	145
Doughnut, plain	1 doughnut	130
Brownie	2" sq.	140
Cookie, plain	3" in diameter	75
<i>Miscellaneous</i>		
Sugar	1 level tbsp. or 3 level tsp.	50
Jam or jelly	1 level tbsp.	60
Peanut butter	1 tbsp.	100
Catsup or chili sauce	2 tbsp.	35
White sauce, medium	$\frac{1}{4}$ cup	100
Brown gravy	$\frac{1}{2}$ cup	80
Boiled dressing (cooked)	1 tbsp.	30
Mayonnaise	1 tbsp.	100
French dressing	1 tbsp.	60
Salad oil, olive oil, etc.	1 tbsp.	125
Margarine	1 tbsp.	100
Herbs and spices		0
Chocolate sauce	2 tbsp.	90
Cheese sauce	2 tbsp.	65
Butterscotch sauce	2 tbsp.	200
<i>Beverages</i>		
Ice-cream soda	1 regular	250
Chocolate malted	8-oz. glass	300
Chocolate milk	8-oz. glass	185
Cocoa made with milk	1 cup	175
Tea or coffee, plain		0
Carbonated beverages	6-oz. bottle	80
Apple juice or cider	$\frac{1}{2}$ cup	65
Grape juice	$\frac{1}{2}$ cup	90

Grapefruit juice, unsweetened	½ cup	40
Pineapple juice	½ cup	55
Prune juice	½ cup	85
Tomato juice	½ cup	25

The person who “eats nothing and gains weight” is undoubtedly concentrating on fattening foods. Some of these high-calorie foods are:

Butter, oleomargarine, and cream
 Oils and salad dressings
 Lards and all foods fried in deep fat
 Candy, sugar, jelly, jam, etc.
 Ice cream, malted milk, sodas
 Carbonated drinks
 Bread, crackers, cookies, cakes, pastries, rice, noodles, macaroni, and spaghetti
 Fat meats and gravies
 Potatoes
 Corn, peas, beans (except string beans), figs, dates, and other dried fruits
 Nuts and olives
 Chocolate and cocoa

On the other hand, the person who “eats all the time and doesn’t gain weight” is apt to be selecting the nonfattening, low-calorie foods. Some of these are:

Lean meats, eggs
 Skimmed milk, cottage cheese (not all cheeses are low in calories)
 Vegetables: e.g., asparagus, string and wax beans, Brussels sprouts, cabbage, cauliflower, celery, cucumber, eggplant, endive, lettuce, mushrooms, pickles, radishes, sauerkraut, spinach, Swiss chard, tomatoes
 Fresh fruits: e.g., blackberries, cranberries, currants, gooseberries, grapefruit, muskmelon, oranges, fresh peaches, fresh pineapple, strawberries, watermelon

Some starchy vegetables have a high-calorie value. They include baked and canned beans, green and canned corn, fresh peas, lima beans, potatoes, and rice. Also, the above fruits prepared with *added sugar* may be high-calorie.

The following vegetables are intermediate between the low- and high-calorie ones: beets, carrots, canned green peas, okra, onions, parsnips, pumpkin, squash, and turnips.

Among fruits, too, there are those which are high-calorie and fattening, e.g., canned apricots, bananas, cherries, huckleberries, nectarines, pears, and plums; the following ones are especially fattening: dates, figs, raisins, dried peaches, prunes, and apricots. The intermediate fruits include apples, blackberries, fresh grapes, fresh pears, and raspberries.

Not everyone can gain or lose weight simply by substituting some high-calorie for some low-calorie foods or *vice versa*. You may be eating *so much* or *so little* that this would make almost no impression on your total calorie intake.

WHY DO PEOPLE EAT TOO MUCH OR TOO LITTLE?

If I had to answer that question in one word, I would say "habit." Many fortunate individuals never want to eat more or less than they need to maintain their ideal weight. When they exercise a great deal they eat more heartily than when they spend a quiet day at home; and if they have a huge Thanksgiving dinner at noon, they just aren't hungry for their next meal. Their appetites are regulated by their requirements, and they seldom develop bad eating habits.

Dr. Norman Jolliffe, in his excellent book *Reduce and Stay Reduced*, has coined the term "appestat" for the mechanism that regulates the appetite. People who don't go above or below their normal weights usually have appestats that are set exactly right.

In many people, however, the appestat is easily influenced or conditioned by habit. A patient of mine who had been visiting relatives and eating the huge meals they set before her, in order to be polite, came home two months later and told me her appetite had increased until she wasn't satisfied with less. On the other hand, people who don't get enough to eat for some time may develop poor appetites. Children coming from families that love food and make a happy event out of each meal, often grow up to be adults whose appestats are set too high, while those from homes where mealtimes are unpleasant, the food skimpy and poorly prepared, may have low appestats. I have frequently had patients who observe this themselves, although they usually express it by saying their stomachs "stretch" or "shrink."

Emotional factors can play an important part in over- or undereating. People who feel lonely and unwanted often eat a great deal because it is one of their few pleasures. Women with small children have frequently told me they eat simply in order to have something to do, being bored by having to stay home so much, or because it makes them feel calmer and better able to cope with the children. On the other hand, worry and tension can also keep people from eating, together with such psychological quirks as the desire for attention and sympathy. Deep psychological problems naturally call for the help of a specialist. However, I have found that many of my patients who have fallen into bad eating habits

can break them by will power, and the type of knowledge given in this chapter.

IF YOU NEED TO REDUCE

Too many sincere but misguided friends and relatives give incorrect and even dangerous advice about reducing and reducing diets. Let's take up a few of the things you may have heard or want to know about.

SHOULD ONE TAKE DRUGS AND MEDICINES IN ORDER TO REDUCE?

No. Most doctors find that it is very rarely necessary to use medicines in the treatment of obesity. Only a doctor can decide whether you need certain medicines which are harmless when taken under his supervision.

Never take any reducing aid or medicine without a doctor's prescription. Many of them contain thyroid which can damage the heart and other parts of the body. (See page 93.) Some reducing aids are harmless to most people, but this is no guarantee that they are safe for you. Besides, these medicines are usually short cuts that turn out not to be a saving after all; they depress the appetite while you are taking them, but the minute you stop, your problems begin again. It is far more sensible to regulate your appetat by dicting.

CAN EXERCISE REDUCE WEIGHT?

Very rarely. It has been estimated that a person would need to walk 36 miles to lose one pound. Also, exercising often increases the appetite. It may be dangerous for an obese person who has a weakened heart. Your doctor will know whether or not to prescribe exercises, and he knows which ones you need and how much you can stand.

CAN UNSIGHTLY FAT BE REMOVED SURGICALLY?

Patients sometimes tell me they have heard of operations to trim layers of fat from the ankles, abdomen, or some other area. This is a very difficult and by no means always effective method, and is undertaken by ethical plastic surgeons only in exceedingly rare cases.

CAN MASSAGE REDUCE WEIGHT?

No. Massage may tone up the skin and muscles and may help the body to adjust to its new, slimmer contours. Your doctor knows when to prescribe massage.

CAN SWEATING OR HOT BATHS REDUCE WEIGHT?

Only temporarily. They remove water which is almost immediately regained. These methods do not accomplish anything, and may be a dangerous strain on the heart and circulation.

HOW ABOUT THE NEW REDUCING DIETS?

So many new diets appear and disappear that it is impossible to discuss them all. Some of them are based on sensible calorie control, with a harmless "gimmick" added (perhaps in the form of a catchy title) to make them popular. The main danger I see in many of these diets is that they tend to encourage people to reduce at a rate that is too rapid for safety. Some diets are too expensive or difficult to be practical, while others are based on theories that have not yet been scientifically proved. From time to time a patient has shown me the current diet craze, saying she could stick to it far more easily than she could follow any general instructions. "Everything's written down," she explains. "I don't have to count calories or consult charts; and best of all, I don't have to make any decisions." If you feel the way she does, take any diet that appeals to you to your doctor, and let him approve or modify it, or write you out one of his own.

IS A DOCTOR NECESSARY FOR SUPERVISION OF LOSS OF WEIGHT?

Reduction of weight calls for the special knowledge of a physician; he will make certain that you don't lose your health while you lose your excess weight. He will see to it that you don't reduce too rapidly and thereby put a strain on your heart and circulation. He will prescribe the correct amount of minerals, proteins, and vitamins to prevent weakening of your bones and organs, and also to maintain your resistance to disease. For example, if you use a "no calorie" salad dressing made of mineral oil, your doctor may want you to take some vitamin pills, because mineral oil prevents the absorption of some of the vitamins your diet would ordinarily provide.

Your doctor has learned many helpful things by studying various people who have been on reducing diets. Individual preferences vary tremendously, and it helps a great deal if you can have your diet adjusted to your taste. Some people are miserable if they are deprived of a bedtime snack; some want a substantial dinner at night and are willing to cut down on lunch in order to have it. Patients are occasionally reconciled to dieting when I tell them they may have hot or cold consomme and

celery whenever they want it, or a cup of slightly sweetened tea to control hunger pangs. (I'll go into the matter of personal preferences more fully a little later in this chapter.)

Faddists and quacks who advocate reducing diets do not follow correct, medically exact rules for dicting. Stay away from them.

CAN YOU EVER REDUCE "ON YOUR OWN?"

Although I see no reason why you shouldn't at least mention it to your physician, it isn't actually necessary to visit him in order to lose five or ten pounds over a period of a few months. However, be sure to report to him immediately if you notice any untoward symptoms such as constipation or diarrhea.

Let's assume that you were in excellent condition at your last checkup, just before going on your vacation, and that, in spite of all your resolutions, you put on another five pounds. If you're sensible, you can get rid of them without danger. *Be sure to maintain an adequate diet as described on page 25 in the previous chapter.* Get rid of your excess weight at the rate of one-half to one pound a week by exercising self-control. Cut out eating between meals, except for practically "no-calorie" foods. Eliminate desserts except for low-calorie fruits. Go easy on high-calorie foods at mealtime, substituting low-calorie ones whenever possible; avoid alcoholic beverages and soft drinks, and resign yourself to getting up from the table without feeling really full (see page 55 for sample menus of reducing diets). In a month or two your appetat will be back where it belongs. Of course this takes self-control.

IS IT WORTH IT?

Decidedly! Don't wait until you are actually obese before you do something about your weight. *Prevention is important.* It is much easier to prevent overweight than to correct it, easier to lose a few pounds than to readjust your appetat after years of indulgence. Watch your weight. If you can't control it, see a doctor.

You may say you don't care, that anything is better than bothering with scales and calories. Occasionally I find a patient, usually an elderly person, who means it when he or she says, "Eating is practically my only remaining pleasure. I'd rather eat myself into my grave than restrain myself and live a little longer." If you feel that way—go ahead. I mean it seriously. But be sure *you really mean it.* You might be surprised at how much satisfaction you can get from eating even while reducing if you follow a carefully supervised diet.

HELP FOR THE PROBLEM DIETER

Almost every patient with whom I've discussed dieting has told me, usually in an apologetic manner, "It's particularly hard for me to diet, Doctor, because. . . ." Then, as a rule, he or she gives one or several of the following reasons:

"It's so expensive."

"I have to cook for nondieters."

"I eat most of my meals in restaurants."

"I get cross and tired and my work (or my family) suffers."

"I often have to be a guest, and I can't be rude."

"I love good food."

Some books and articles on dieting dismiss these things as excuses. It is true that some people use them as excuses; but I, having been faced with several of them myself, know that they are real problems. There is no doubt in my mind that:

Low-calorie foods *tend* to be more expensive than high ones. It is cheaper to fill up on baked beans, rice, or macaroni than it is on lobster or steak.

A housewife can't think only of her own diet when she is cooking for a husband who does hard physical work, and for several teen-agers who need to gain weight.

It is not easy to count calories in a restaurant when you don't even know what is in some of the dishes, and when the price includes dessert and unlimited bread and butter.

Very few bosses or families will make allowances for the fact that you're cross and tired because you're hungry.

You simply cannot tell certain hostesses that you are dieting, or ignore the creamed chicken and French fries on your plate at a business luncheon.

Being deprived of good food is certainly very hard on some people. Yes, dieting would be ever so much simpler if it weren't for the problems of money, family, work, society, and tastes. But then, so would life itself! Since these are problems almost all of us have to face, I've purposely put off giving samples of reducing diets until this section, so that I can combine them with suggestions which I hope will help you solve some of these problems. Read them all, paying especial attention to the ones that apply to you.

First of all, look at the examples of reducing diets for one day (given in Tables 6, 7, and 8). They are for 1,000 calories a day. This is probably lower than the diet you require, so you have a certain amount of leeway. Consult the Calorie Table and add the extra calories to which you

TABLE 6
1,000 CALORIE MENU A

<i>Breakfast</i>		<i>Luncheon</i>	
Orange juice (½ cup)	85	Consomme (1 cup)	25
Soft boiled egg	75	1 Lamb chop	130
Toast, 1 slice	75	Broccoli (1 large stalk)	40
Butter (1 tsp.)	30	Carrots (½ cup)	25
Coffee	0	Pineapple slice	50
with cream (1 tbsp.)	30	Coffee or tea	0
	—	with cream	30
			300
<i>Supper</i>			
Crabmeat (3 oz.)	90		
Green peas (½ cup)	55		
Cole slaw	15		
with vinegar	0		
Apple	75		
1 Cookie	75		
Skim milk	90		
			400
TOTAL		995	

TABLE 7
1,000 CALORIE MENU B

<i>Breakfast</i>		<i>Luncheon</i>	
Grapefruit, ½	70	Bouillon	25
Poached egg	75	Beef tongue (3 thin slices)	160
Hard roll	95	Asparagus (6-7 stalks)	20
Butter (1 tsp. or half a pat)	30	Summer squash (½ cup)	15
Skim milk	90	Canned peaches (2 halves)	100
	—	Coffee	0
	360	with skim milk	10
			330
<i>Supper</i>			
Clear tomato soup (¾ cup)	75		
Slice of chicken	100		
Green beans (1 cup)	30		
Eggplant (4 slices)	50		
Cantaloupe, ½	50		
Tea with lemon	0		
			305
TOTAL		995	

TABLE 8
1,000 CALORIE MENU C

<i>Breakfast</i>		<i>Luncheon</i>	
Cantaloupe, $\frac{1}{2}$	35	Casserole of eggplant, ground	
Boiled egg	75	lean meat, tomatoes, egg,	
Black coffee or tea	0	and buttermilk	250
	—	Cole slaw with vinegar	12
	110	Fresh peach	50
		Skim milk	90
			—
			402
<i>Dinner</i>			
Bouillon		25	
Shish kabob (broiled, skew- ered lamb)		340	
Lettuce salad ($\frac{1}{4}$ head)		10	
with boiled dressing		30	
Asparagus (6 spears)		20	
Small slice sponge cake		100	
Black coffee		0	

TOTAL 1037

Coffee and tea may be sweetened with saccharin without adding calories.

To add extra calories one may add sugar and cream to the coffee or add a moderate amount of snacks such as:

Carbonated beverage or cider (1 glass)	180
Ritz crackers	15 each
Cheese tidbits	1 each
Peach or tangerine	50
Raw carrot	25

are entitled in any way you like: a few at each meal or all of them at your most important meal; or in the form of between-meal snacks.

Menu A is an average diet; Menu B provides a bulky intestinal residue for those who need it; Menu C is for those people who want special dishes (they should consult *The Low-Calorie Cook Book* by Bernard Koten, and the *Reducing Cook Book and Diet Guide* by Llewellyn Miller.

SOME DIETING SUGGESTIONS

Fats. Use skim milk or powdered milk; or take the cream off whole milk and use the fat-free milk for your beverages (hot skimmed milk is good in breakfast coffee) and in cooking soups, mashed potatoes, gravies, etc.

Powdered milk is excellent for gravies. You can remove your portion and then add the cream or butter or margarine for the rest of your family. The cream you save can be used to convert *your* low-calorie gelatin or fruit desserts into high-calorie ones for the rest of your family. Use cottage cheese instead of butter or margarine. It is especially good with chives, or onion or celery salt, on thin dry (Melba) toast. Cook finely chopped spinach and other greens in very little water to which a bouillon cube has been added, and you won't miss the butter. Avoid fried foods, especially those that are French fried. It is difficult to tell exactly how many calories these dishes contain as they absorb varying amounts of fat—but it is always a great deal. Boil or poach eggs; you won't mind unbuttered toast if you serve your egg on it. Try cooking eggs on a griddle or the type of pan that doesn't require greasing. Cook stews ahead of time, let them cool, and remove the hardened fat, at least from your portion. (Stews are even better when warmed up again.) Trim the fat from your meat. Omit the rich gravy.

Sweets: Saccharin, or other artificial sweeteners, in tablet, powdered, liquid, or crystal form, can be used in many ways in addition to sweetening your coffee or tea. It is not a drug or a medicine, but merely an artificial sweetener. Use it with skim milk on your cereal and your portion of strawberries or other fruits, cooked or uncooked. (If you serve fruit stewed in sugar, give the syrup to someone who needs the calories.) Sponge and angel cake aren't very high in calories if you remove your portion before icing them for the family, or before adding jam or fruit sirup. Make your own gelatin desserts so you can use saccharin for your portion, sugar for the rest. Take very small portions of any dessert. Avoid soft drinks, unless you use the ones that contain a *no-calorie* type of sweetener.

Starches: Eat leafy green vegetables to provide the bulk you are accustomed to getting from starches. Don't munch on bread and butter, especially in restaurants. Ask the waiter not to bring it until he serves the main course. In some parts of the country salads are served first. This is a good idea because salads take the edge off your hunger before you get to the higher-calorie foods. Use wine vinegar with herbs or lemon juice on yours, while serving mayonnaise for the others.

Good gravies can be made without flour—powdered milk is one way; vegetables, either dried ones or fresh ones cooked down, and herbs such as *filé* will thicken stews.

Chinese restaurants serve bulky, low-calorie dishes—if you avoid the rice. You can buy many Chinese vegetables in stores.

Avoid restaurants that enforce the “no substitute” rule. Many restaurants will give you an extra vegetable or an extra serving of the one on your dinner, or a salad, in place of potatoes.

When serving soups such as minestrone, chowder, etc., take mainly the clear part for yourself, leaving most of the macaroni, potatoes, and so on for the others. Restaurants will usually do this if you ask.

OTHER SUGGESTIONS

Don't taste while cooking. This may spoil some appetites, but probably not yours! Don't lick the bowl when you've finished cooking. It has been jokingly estimated that half the overweight housewives in this country have tasted or licked themselves fat.

Snacks add a great deal in calories. Are they worth it? If you're a "snacker," study the snack chart (Table 9) carefully so you will know whether it is worth it. A cup of tea or coffee, without cream, with one teaspoonful of sugar is only 16 calories; it may satisfy your hunger and provide the quick energy you need. A chocolate sundae will run between 300 and 400 calories while half a brick of plain ice cream is 200 ("low-calorie" ice cream is 100).

Nibbling between meals helps some people to diet by decreasing their appetite at mealtime. If you try this, keep careful count of calories so you'll know whether or not it's really helping you.

Eating Binges. Just as some people can take a drink without becoming alcoholics, so some dieters are able to go off their diets occasionally without ill effect. Their morale may even benefit from knowing they can do this every month, which is better than constant "cheating." But remember, your appetat is probably easily conditioned, or you wouldn't be dieting in the first place, so be very careful.

Talking about your diet. This may make people shun you as a bore. Some people will try to get you to break your diet, while others will help you to keep it. You have to know which kind you are with before you start discussing your diet. Sometimes it will save embarrassment for you to say that the doctor has told you not to eat certain foods. As a general rule, the best social technique is to avoid attracting attention to yourself and your problem. Simply eat very little of fattening foods that are placed before you.

Breakfast. For reasons explained previously, a hearty, *high-protein* meal in the morning usually keeps people from being hungry in the mid-morning and from eating too much at noon.

Alcoholic Beverages. Consult the calorie chart in Table 10, and you will see that these are high in calories; they don't satisfy your hunger except, sometimes, when taken in excess. Usually they make you forget you're on a diet.

TABLE 9

CALORIE CONTENT OF
SNACK FOODS

<i>Food</i>	<i>Amount</i>	<i>Calories</i>
Chocolate bar	1 small bar	155
Chocolate creams	1 average size	50
Cookies	1 medium size	75
Doughnut	1 plain	135
Banana	1 large	100
Peach	1 medium size	50
Apple	1 medium size	75
Raisins	½ cup	200
Popcorn	1 cup popped	55
Potato chips	8-10 or ½ cup	100
Peanuts or pistachio nuts	1	5
Walnuts, pecans, filberts, or cashews	4 whole or 1 tbsp. chopped	40
Brazil nuts	1	50
Butternuts	1	25
Peanut butter	1 tbsp.	100
Pickles	1 large sour	10
	1 average sweet	15
Olives	1	10
Ice cream	½ cup	200
Chocolate-nut sundae		270
Ice cream soda		255
Chocolate malted milk	1 glass	450
Eggnog (without liquor)	1 glass	235
Carbonated beverages	6 oz. or 1 bottle	80
Beer	8 oz. or 1 glass	120
Cocktail	1 cocktail glass	150

TABLE 10

<i>Alcoholic beverages</i>	<i>Calories</i>
Beer	8 oz. glass 120
Wine	1 wine glass 75
Gin	1 jigger 115
Rum	1 jigger 125
Whiskey	1 jigger 120
Brandy	1 brandy glass 80
Cocktail	150

Moderation. This should be your key word. Remember, it took a long time for you to put on this fat you want to lose, so be moderate about reducing, too. Fat lost at the rate of one-half pound to a pound a week stays off much better than that lost in a hurry—and a pound a week adds up to 52 pounds a year! When you lose weight slowly, your skin adjusts itself and you don't get that deflated-balloon look.

IF YOU NEED TO GAIN WEIGHT

If you are markedly underweight or are losing weight you, even more than the overweight person, should consult a doctor.

A chronic underweight condition or a sudden loss of weight is an indication of poor health. It may indicate the onset or presence of a disease; chronic undernutrition is very apt to make one more susceptible to sickness. In either case, it is a signal for action to protect one's health.

Loss of weight or undernutrition may be warnings that diabetes has set in, or that the thyroid gland is overactive; tuberculosis may be the cause, although, contrary to popular opinion, it frequently does not produce loss of weight. Intestinal worms, especially in children, may be responsible.

These are just a few of the causes. All kinds of chronic infections and many other illnesses can result in loss of weight. Finding the cause is your doctor's concern. It is your responsibility only to watch your weight and that of your children. If you notice a definite loss of weight, report it to your doctor or to a hospital clinic. They, and not you, will be able to track down the cause and prescribe the treatment.

HOW TO TELL IF YOU ARE UNDERWEIGHT

Usually you need the help of a doctor, even more than the overweight person does, in deciding whether or not you are actually underweight. If you are ten to fifteen pounds below the figures given on page 43, and if the bones stick out all over your body, or the muscles don't cover the back, thighs and buttocks with resilient protection, or your face is thin and drawn, you are very likely underweight. But the figures in this table can't always answer your question. You may be the long, lean type whose weight normally runs below those given. Your doctor, by considering the results of your physical examination, including observations of the size and bony framework of your body, can decide fairly accurately whether you are underweight. Too many people worry over an underweight condition which does not actually exist, because they have accepted the "diagnosis" of well-intentioned friends or relatives—often individuals whose age or background leads them to believe "it is healthy to be stout." Let your doctor decide whether you are truly underweight in the sense of needing special treatment for it.

WHAT TO DO ABOUT IT

If your extreme thinness is not due to ill health, it is due to a failure to eat enough of the right food. A good diet provides:

(a) flesh-building proteins, (b) minerals for the bones and teeth, (c) vitamins, iron, iodine, etc., and (d) carbohydrates to provide a reservoir of energy. If the diet is too low in protein, the muscles are thin; unless sufficient carbohydrates are consumed, the body obtains its energy from fats; if these, too, are lacking, it draws on the muscles and some of the organs which start to shrink. The Eskimos eat little carbohydrate, getting their energy and keeping up their weight with fats and protein. Americans usually prefer a diet with less fat and protein, and depend on carbohydrate to provide energy.

Having decided your diet is inadequate, your doctor will try to discover whether you have a psychological resistance to eating. Although such attitudes may be deep-seated, I have had quite a few patients whose appetites were low because they had been told it was wrong, or greedy, or wasteful to eat unless they were really hungry, or that it was fashionable to look excessively thin.

Just as your doctor worked out ways for your obese friend to consume fewer calories, he will help you to take in additional ones. Gaining weight is not a simple matter of eating more. Your problems, too, will have to be solved. The doctor can help a great deal, but you will have to cooperate wholeheartedly. You must remind yourself that (1) you *can* eat even though you aren't hungry, (2) you *can* get in the habit of substituting high-calorie foods for the low-calorie ones you prefer.

Pills, tonics, exercises, massage, ointments should be avoided except when they are prescribed by a doctor. They can be dangerous, for reasons I have already indicated. The safe way to gain weight is to follow your doctor's instructions, particularly in regard to the diet he will recommend for you.

GAINING WEIGHT WITHOUT MEDICAL SUPERVISION

As in the case of the moderately obese, people who are somewhat underweight can gain on their own if they have been given a clean bill of health by their physicians. Perhaps your doctor has cautioned you against losing weight by neglecting to eat three good meals a day, and you know you have been getting careless. Or perhaps he has said he would like you to gain five to ten pounds, but since he also said you were in good condition, you've ignored his advice until today, when something injured your vanity. You can gain weight on your own, but be sure to consult your doctor if, for example, cutting down on bulky low-calorie vegetables should make you constipated. Don't take laxatives or mineral oil, which may deprive you of some of the vitamins you need (see Constipation, page 746).

ADVICE TO THE PROBLEM EATER

TIME

It takes time to eat proper meals and learn to enjoy them instead of getting through with the task of swallowing your food as fast as possible. Pleasant, relaxing company may help you to prolong your mealtime so you can eat more without feeling stuffed. Some people who eat alone find it helps to listen to the radio, particularly to musical selections, or even to read to keep from being bored. Some find large portions discourage them from eating, while others who "can't take seconds" do better with big servings. Meals that look attractive usually encourage appetite. As a rule, people eat more at "family style" meals, at which the food is all placed on the table and they help themselves, than they do when they have it passed to them formally. It takes thought and attention for you to find out what is best for you.

You also should take time to relax before meals. It is difficult to eat when you are tired. And you should set aside plenty of time for a good night's rest, to avoid fatigue at breakfast time.

SUBSTITUTE HIGH-CALORIE FOR LOW-CALORIE FOODS

Concentrate on fattening ones such as cream soups, chowders, mayonnaise, cereals with heavy cream, sauces made with butter or margarine or thickened with flour, desserts to which hard sauce or whipped cream has been added. Substitute high-calorie vegetables like peas, potatoes, and lima beans for bulky low-calorie ones until your stomach has grown accustomed to handling larger quantities.

ADD HIGH-CALORIE FOODS

Get in the habit of putting a little more butter or margarine on your bread; add an extra pat of butter (which most restaurants will provide) to your vegetables and such soups as chowders. Add cream to your milk.

EAT MORE

You can do it. Another piece of bread and butter, a second helping, soon become matters of habit.

SNACKS

You can learn to enjoy them, finding ones that don't spoil your appetite. Rich milk or cocoa or an eggnog, with some crackers, can add plenty

of calories and may even make you sleep better. Try it, and see whether it does, cutting it out if insomnia or restless sleep results, in which case you may be able to add snacks between meals. (See Table 9 for the high-calorie snacks.)

SWEETS

Although they play an important part in the diet, sweets present a ticklish problem. Candy and other carbohydrate foods such as jellies, pastry, cake, and ice cream are concentrated sources of energy. However, they may satiate the hunger for more valuable foods. Particularly in children and young adults, these sugary foods may increase the decay of teeth. (See page 76 on sweets and tooth decay.) If they don't interfere with your appetite and do help you to gain weight, be sure to have frequent dental checkups.

CONSULT THE SUGGESTIONS FOR PROBLEM DIETERS (page 54).

Some of these may be useful to you *in reverse*. But remember, you are different from the person with a tendency to overweight. Tasting is apt to spoil your appetite. *Don't* eat a light breakfast in the hope of being hungrier at noon. You need a good, high-protein breakfast to get you off to a good start every day. You want to increase your consumption of food by raising your appetat, so avoid anything that will have the opposite tendency.

SMOKING

There is no doubt that smoking, particularly chain or any excessive smoking, tends to keep people from eating, and interferes with the enjoyment of good food. However, some people become so nervous when they give up smoking that I would scarcely make so drastic a suggestion to everyone who wants to gain. Try it, and also try cutting down. At least, avoid cigarettes just before meals and at mealtimes.

ALCOHOLIC BEVERAGES

This, too, is a matter for each individual to decide. Many people find that an *apéritif* such as a glass of sherry sipped in a leisurely manner before dinner helps them to relax and stimulates the appetite. But don't substitute alcohol for food.

Consult the sample *high-calorie diets* in Tables 11, 12, and 13. Take your dieting seriously; it is important to your health. Menu D and Menu

E contain rich, concentrated high-calorie foods. They are less bulky than Menu F which gets its large number of calories from employing large quantities of lower-calorie materials. Try these high-calorie diets until you find the type which you like—and which helps add the pounds.

TABLE 11
3,500 CALORIE MENU D

<i>Breakfast</i>		<i>Luncheon</i>	
1 Banana sliced	100	Cup of cream of potato soup	250
with cream (½ cup)	120	Macaroni and cheese (1 cup)	300
2 Griddle cakes	200	Apple and nut salad	150
with sirup and	50	Pie a la mode	400
butter (1 tbsp.)	100	Cocoa	210
2 Sausages	350		
Black coffee	0		
	920		1310

Dinner

Fruit cocktail	90
Duck (4 oz.)	350
with gravy	20
Baked potato	90
with butter	100
Green peas	55
Avocado pear salad	250
with mayonnaise	100
Chocolate pudding	200
Tea or coffee	0
	1255

DAILY TOTAL 3485

TABLE 12
3,500 CALORIE MENU E

<i>Breakfast</i>		<i>Luncheon</i>	
Dry cereal	100	Cup of cream of tomato soup	250
with cream and sugar and	140	3 Saltines	45
½ banana, sliced	50	Ham and cheese sandwich	350
Toast	75	2 Celery stalks	15
with butter (1 tbsp.) and	100	filled with mayonnaise	100
jelly	100	Milk (half cream) or cocoa	210
Coffee or tea	0	Chocolate layer cake	400
with 1 tsp. sugar and	20		
2 tbsp. cream	60		
	645		1370

Dinner

Pineapple juice (4 oz. glass)	55
1 Pork chop or veal chop	235
with gravy	20
Mashed potatoes (1 potato)	100
Creamed broccoli	140
Bread and butter	100
Sweetened applesauce	
(½ cup)	100
Ice cream sundae or	335
lemon meringue pie	
Milk (8 oz. glass)	170
	1275

Bedtime

Eggnog	230
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DAILY TOTAL 3490

TABLE 13

3,500 CALORIE MENU F

<i>Breakfast</i>		<i>Luncheon</i>	
5 large prunes	135	Split pea soup	200
Dry cereal	100	with croutons	40
with sugar and cream	140	Baked ham or veal cutlet	240
Scrambled eggs (1)	100	Potato	90
2 strips bacon	100	Carrots	25
Toast	75	Cottage cheese salad	50
and butter	100	with peach	100
Coffee	0	Bread	75
with sugar and cream	80	and butter	100
	830	Jello	90
		with whipped cream	60
		Tea with lemon	0
			1070

Supper

Tomato juice	25
Pork and beans (1 cup)	500
2 Frankfurters	300
Tossed green salad	25
with French dressing	60
Large roll	95
and butter	100
Ice cream	200
Brownie	140
Milk	170

1615

DAILY TOTAL 3515

UNDERWEIGHT AND OVERWEIGHT IN CHILDREN

The proper diet for infants, children, and adolescents is described on pages 377, 383 and 440. *All cases of underweight or overweight should be discussed with your doctor.* If you are in any doubt, let him decide.

Parents can do great harm by trying to make children eat more or less because someone—perhaps a relative or neighbor—has decided they are too thin or too fat. They can also do great harm by dismissing the subject with, “Oh, Johnny will grow out of it!”

Underweight and overweight in young people can be serious; only a doctor can determine this and decide how it should be dealt with according to the cause, the age of the child, and the entire situation. The only thing parents should do on their own is to provide proper meals and a proper attitude toward them.

Don't use food as a reward or withhold it as a punishment. Make meals pleasant and relaxed without overemphasizing them. In this way you will help to develop well-functioning appetites in your children, for which they will be grateful all their lives.

I discuss punishments as a method of maintaining discipline in children on page 394. The problem of *underweight and overweight in adolescence* is described on page 441.

Ideal weights for adolescent boys and girls are given on page 442.

CHAPTER 4

Care of the Teeth and Gums

TOOTH DECAY—which your dentist calls *dental caries*—is the most common disease in the country. It is the chief cause of toothache, and of your fillings and inlays; it is the major source of pulp and root abscesses, and a very common reason why teeth have to be extracted and artificial ones substituted for them.

Another important dental disease, which involves the gums and tooth sockets, is called *pyorrhea*. This is a progressive disease, which may have as its first symptoms a reddening and inflammation of the gums. If untreated, pyorrhea leads to the destruction of the attachments of the teeth to the jaw bones. In advanced cases, the bone itself will be eroded. The final result of this dental disease is the loosening of the teeth to the point where they fall out or need to be extracted.

Aside from the ever-present dental caries and pyorrhea, there are some other tooth troubles, such as impacted teeth, accident cases, and problems resulting from poor alignment of teeth. When teeth are not correctly aligned the bite doesn't work properly, and our chewing is inadequate or difficult; or the teeth overlap and stick out in an unattractive manner. The correction of this condition is called *orthodontia*, and is slow, difficult work, usually handled by specialists. These dentists are called *orthodontists*. You have seen some of their work in children who wear braces to correct the alignment of their teeth.

By now you may be asking, "Wouldn't it be simpler to have all my teeth pulled before caries and/or pyorrhea ruin them—and get some artificial ones right away?" At one time people used to do just that: they would have a tooth extracted as soon as it started to ache, or even before. Fortunately, no reputable dentist would do such a thing today. Dentists now try to save every tooth they can. Dentures involve time, trouble, and expense, and they seldom do as good a job of chewing as one's own teeth can do—and the proper chewing of food is of great value to digestion. However, modern dentures are very remarkable, and many of my patients who have artificial teeth tell me that they look much better than they expected. The new dentures are also far more comfortable than the older models.

PAINLESS DENTISTRY

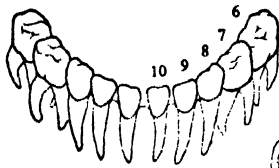
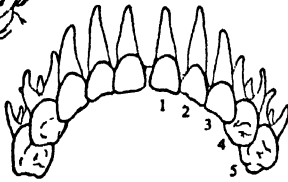
Today dentists are able to save many teeth which formerly they would have extracted. The main reason for this lies in the advances dentistry has made, especially in the direction of painless dentistry. Better instruments and improved techniques make it possible for the dentist to work faster and more gently. For example, air-cooled drills avoid creating the heat which is a major source of pain in drilling.

Years ago dentists used anesthetics only when extracting teeth. Today most dentists use them for almost all painful procedures, including preparing teeth for fillings, with children as well as adults. The most popular methods are the injections of procaine, Novocain, etc. into the nerves or gums, or the inhalation of nitrous oxide gas. Some dentists use the "light nitrous oxide analgesia method" (analgesia means insensibility to pain). The patient inhales a mixture of nitrous oxide and oxygen through a nosepiece. Although he remains conscious and is aware of the drilling, his sensations are dulled so that it does not hurt him. Some patients actually enjoy taking nitrous oxide in this way, and most children prefer it to an injection of Novocain. Of course the gas must be administered by a skilled dentist; and there are people who should not take it because they are suffering from certain diseases.

A type of mild analgesia which I recommend for nervous or sensitive patients is a pain-killing medicine such as ordinary aspirin (or stronger pain-relievers such as codeine or Demerol). The tablets taken an hour *before* your appointment can make a real difference. If you are apprehensive about having work done on your teeth, ask your doctor or dentist about this. Sometimes a sedative such as phenobarbital will be very helpful, especially for children. Don't be ashamed to ask for something for relief of your pain or to enable you to get a good night's sleep after a long, difficult session. Some of my patients are surprised when I suggest such things, and even more so when I tell them that I am certainly not above taking a pain-reliever before a session with the dentist. Because some people don't mind dental work, doctors and dentists may fail to take the time to discuss this with you unless you ask about it. Always remember that your doctor and dentist don't want you to suffer needlessly.

YOUR TEETH

Nature provides two sets of teeth in one's lifetime: the twenty deciduous (first, baby, or milk) teeth, and the thirty-two permanent (second) teeth. This is not extravagant of nature, for the jaws of an infant aren't large enough for the teeth he will get in later life. But don't make the



BABY TEETH

1. central incisor—7½ mos.
2. lateral incisor—9 mos.
3. cuspid—18 mos.
4. first molar—14 mos.
5. second molar—24 mos.
6. second molar—20 mos.
7. first molar—15 mos.
8. cuspid—16 mos.
9. lateral incisor—7 mos.
10. central incisor—6 mos.



PERMANENT TEETH

1. central incisor—7-8 yrs.
2. lateral incisor—8-9 yrs.
3. cuspid—11-12 yrs.
4. first bicuspid—10-11 yrs.
5. second bicuspid—10-12 yrs.
6. first molar—6-7 yrs.
7. second molar—12-13 yrs.
8. third molar—17-21 yrs.
9. third molar—17-21 yrs.
10. second molar—11-13 yrs.
11. first molar—6-7 yrs.
12. second bicuspid—11-12 yrs.
13. first bicuspid—10-12 yrs.
14. cuspid—9-10 yrs.
15. lateral incisor—7-8 yrs.
16. central incisor—6-7 yrs.

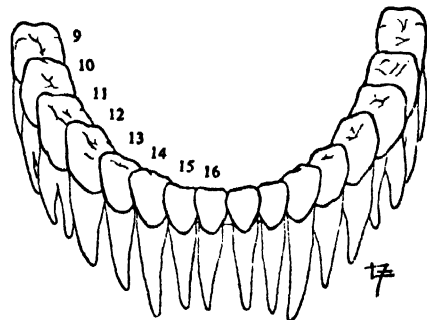
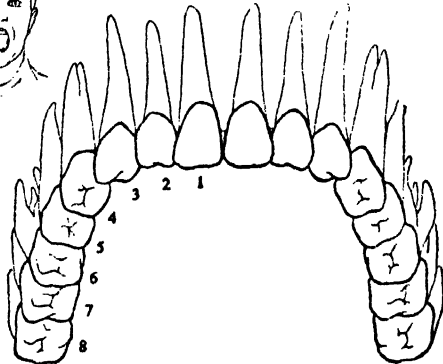


*Illustration 4-1. BABY TEETH AND
PERMANENT TEETH.*

Approximate time of their appearance.

mistake of assuming that the first teeth are not important because they are expendable. If these teeth become badly decayed and have to be pulled, the permanent teeth may not come into place properly. Those thirty-two teeth are all that nature will ever give you. There is no case on record of anyone having ever developed a third set of natural teeth.

The first teeth start to appear (erupt) when the infant is about six months old, and continue to erupt until he is about 30 months old. Shedding usually begins when the child is six or seven years old. At that

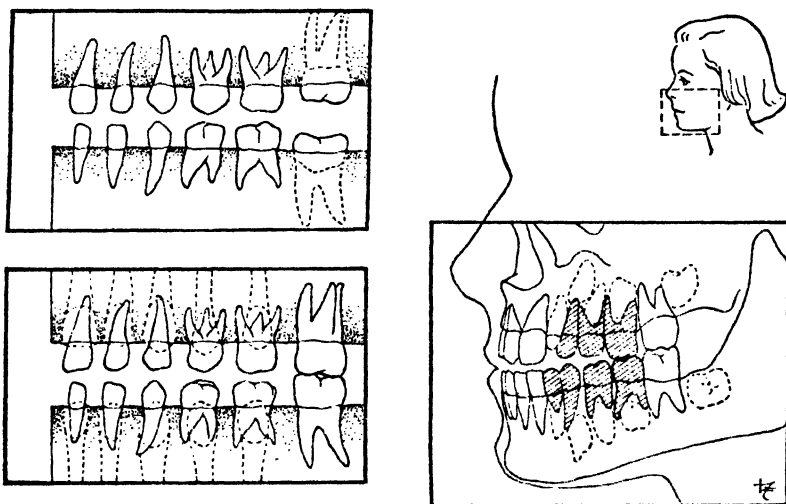


Illustration 4-2. REPLACEMENT OF BABY TEETH BY PERMANENT TEETH

UPPER LEFT: One side of the jaw at about 6 years of age, showing the milk teeth, in diagrammatic form. The first permanent molars are appearing. **LOWER LEFT:** At about 8 years of age. The first permanent molars have appeared, and other permanent teeth are appearing. **RIGHT:** At about 9½ years of age. Some baby teeth (shaded) are still in; some permanent teeth have fully appeared (solid outline); and some permanent teeth are about to appear (dotted lines).

age the first permanent teeth, the first molars (six-year molars), also usually appear. The following is a rough guide to when the different teeth erupt.

I say "rough guide" because these ages vary according to the individual. However, be sure to consult your dentist or physician if your child's teeth don't appear at about the time they should. He can then start searching for the reason.

TABLE 14
AGES AT WHICH INDIVIDUAL TEETH APPEAR

<i>Tooth</i>	<i>Baby Teeth*</i> (<i>Age in Months</i>)	<i>Permanent Teeth</i> (<i>Age in Years</i>)	
		UPPER TEETH	LOWER TEETH
Central incisor	5-8	7-8	6-7
Lateral incisor	7-11	8-9	7-8
Cuspid	16-20	11-12	9-10
First bicuspid		10-11	10-12
Second bicuspid	10-16	10-12	11-12
First molar	20-30	6-7	6-7
Second molar		12-13	11-13
Third molar		17-21	17-21

*The baby teeth referred to as the second bicuspid and the first molar are also called the first molar and the second molar.

Proper nourishment is essential to the development of both the first and the permanent teeth (see page 32). Cleanliness and dental care are also necessary, so start taking your child to the dentist early. Various ages are recommended by different authorities. Personally, I think it is a good idea to begin soon after the 20 first teeth have appeared (at two and a half to three years). The chances are that no treatment will be needed then, so the child's first (and very important) experience with the dentist will be a pleasant one, especially if you take a little trouble to prepare him for it. Play "going to the dentist" with your child and mark the occasion by the gift of some simple toy such as a balloon.

Give your child a small, soft-bristle toothbrush for his own. Let him brush his teeth at the same time as one of his parents. Children are great imitators. Encourage the child to use a small amount of dentifrice. Praise his performance even though his efforts for some time will appear clumsy and poorly coordinated.

CHOOSE YOUR DENTIST CAREFULLY

Every family needs a competent dentist. Also, the decisive factor in your child's attitude toward dental work will depend on your dentist. As in medicine, there is a tremendous difference between the men in the dental profession—only now you have your doctor or your pediatrician to help you make your choice. Your local dental school, dental society, or health officer will also help you to find a dentist or, if you can't afford a private one, will direct you to the nearest good clinic. But remember that however well qualified a dentist may be, his skill and personality can make all the difference in the world to you. I add "personality" be-

cause a good deal of our suffering in the dentist's chair comes from fear and tension, and a sympathetic dentist, willing to take time and trouble, can spare you most of it. It is worth your time and trouble to find such a dentist, especially for your children. It may be worth while for you to travel to a dental center or clinic in order to find a person especially trained and suited to working with children.

IMPACTED TEETH

Look at the chart again. You've heard about impacted teeth. This means a tooth which, although formed, does not come through the gums, or pushes only part way through. This happens most frequently in the case of the third molars (wisdom teeth). If a tooth fails to come through, causing pain or swelling, consult your dentist. Only he, with the help of his x-ray, will be able to tell you what, if anything, should be done.

ALIGNMENT OF TEETH

Everyone has seen teeth that are irregular, or which overlap, or stick out in odd directions. Sometimes the upper and lower teeth do not meet (occlude) properly. This may be due to the fact that the first teeth were lost too soon because of decay or accident—a good reason for taking your child to the dentist early. It may also be due to the fact that the teeth failed to fall out when they should. Some dentists believe that excessive thumb or finger sucking at the time the second teeth are coming in may be responsible. (Since the happy child has usually given up sucking his thumb by the time he is six, it is advisable to discuss this habit with your doctor if it persists.) An important cause of irregular teeth and faulty occlusion, however, is the size and shape of the jaw; a narrow jaw, for example, will not have room for properly spaced teeth.

CORRECTING IRREGULAR TEETH

Poorly aligned teeth are apt to give trouble because the food collects behind them and the gums become irritated. Because only a few of the teeth meet in chewing, the force of the bite falls entirely upon them, and loosens them. Perhaps equally important, they detract from the individual's appearance. Many people would be happier if they didn't have "buck teeth" or a "weak" receding chin. Your dentist can tell you whether your child's bite is so poor he can't chew his food properly; he will suggest that you see an orthodontist, and help you to find a qualified one.

You may be so anxious to do the right thing by your child that you

fail to realize what a financial burden the prolonged treatment is going to be. It may result in only a slight improvement. Also, some people suggest having teeth straightened for purposes of appearance when actually an irregular tooth or two may not really be disfiguring. Be sure to discuss this matter frankly with your dentist, and you and he can undoubtedly arrive at a suitable decision together. As for payment, your dentist may be willing to spread out the payment of his bills. If your child really needs orthodontic braces and you can't afford them, don't hesitate to investigate dental clinics, as suggested on page 585. I have had patients whose expenditures for a child's tooth braces resulted in their using money they should have spent on more vital matters. People frequently spend the entire sum they have allocated to health on dental bills, and then fail to go to the doctor because they can't afford it. *Medical and dental care should be two separate items in your budget.*

DENTAL CARIES

Look at the picture of the tooth on page 74. You will see that the part of it (called the crown) that lies above the surface of the gum is covered with a coating of enamel; fortunately this is thickest on the "grinding surface" where it wears down from use. The part of the tooth (called the root) that lies within the jaw is covered with a thin bonelike layer (cementum). Beneath the enamel lies the resilient, leathery dentine, with a chamber, called the pulp chamber, and the root canal. They contain the blood vessels and nerve fibers which nourish the tooth and maintain its life and sensations.

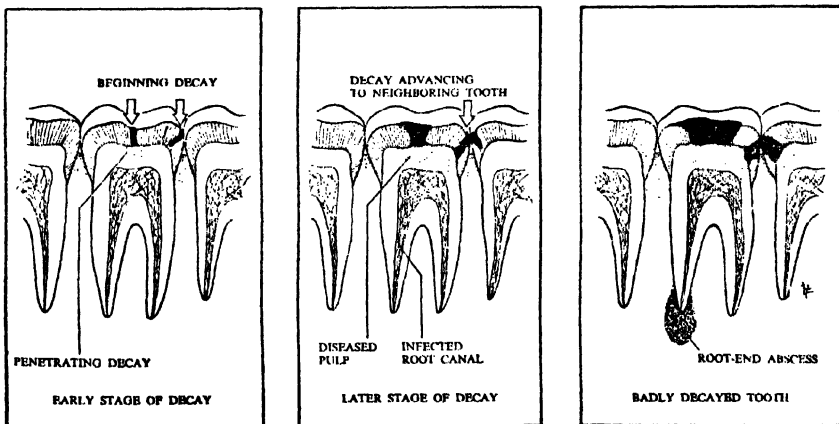


Illustration 4-3. EARLY AND LATE STAGES OF DENTAL CARIES (DECAY).

It is important to realize, first of all, that *dental caries is a disease*, not a vague, mysterious "rotting" of the teeth which must be accepted fatalistically. Dental caries *always* starts on the outside of the teeth, in the enamel. If we focus a microscope on a section of enamel where the tiniest new cavity is developing, we see a pinhead-sized collection of bacteria and food adhering to the smooth surface of the tooth, similar to barnacles gathering on the smooth hull of a ship. The dentists call this collection a *plaque*.

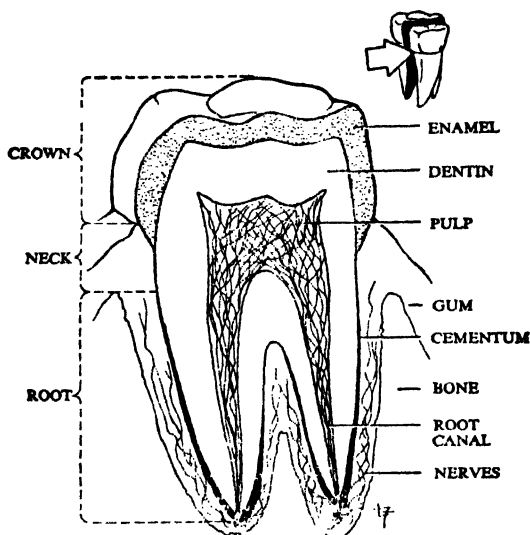


Illustration 4-4. THE ANATOMY OF A TOOTH. SHOWING ITS CONSTRUCTION AND PLACEMENT IN THE JAW.

It is generally believed that a good proportion of these bacteria are the kind that thrive best on starchy and sugary foods, which they change into *lactic acid*. Although tooth enamel is the strongest material in the body, able to withstand repeatedly enormous biting pressures in pounds per square inch, lactic acid quickly and permanently dissolves it. Eating minute pits and furrows in the surface of the tooth, the acid opens up new territory for the bacteria. Soon they reach the softer, richer dentine, where they grow faster and spread rapidly. They proceed into the root canal, attacking the nerves and causing great pain. (For temporary, partial relief from toothache, see page 485.) Infected pulps or decaying teeth make excellent breeding places for bacteria; they can cause localized abscesses, and may even enter the blood stream to spread their poison to various parts of the body.

FILLING TEETH

Enamel that has been destroyed by acid won't grow and come together again; neither will the dentine of the tooth destroyed by bacteria. Unless the decay has gone too far, the dentist can save the tooth by removing the diseased portion and filling the cavity. The dentist drills out the decayed area, treats it with an antiseptic, and puts in a perfectly fitting filling.

Dentists usually consider a tooth beyond repair when decay has entered the root canal, affecting the pulp. The tooth is usually extracted. In special cases root canals can be filled. This is done when it is important to save a certain tooth, especially a front one. Thereafter, such teeth must be examined regularly by means of x-rays, and extracted if infection attacks them.

WHY DO YOU GET SO MANY CAVITIES?

"This is all very interesting," you may say, "But why do *I* have so many cavities? My sister, who lives just the way I do, hasn't any."

Some individuals seem to have an immunity to dental caries. Most of us have a partial immunity; that is, certain teeth (the back ones, or molars) may decay while the front ones almost never get cavities. Sometimes we have an immunity at certain times and not at others: the same patient may have numerous cavities one year and not develop a single cavity the following year. As yet, these types of immunity are not understood.

In some communities the inhabitants are practically free from tooth decay: some Alaskan Eskimos, the natives of parts of the Hebrides islands off the coast of Scotland, several tribes of South African Zulus, and a few others. In some areas there is partial immunity, as in certain sections of Texas, Oklahoma, and some other states. Resistance to tooth decay in these areas in the United States appears to be directly related to the fluoride (fluorine) content of the water.

Fluoride appears to be effective if taken by young people. However, *it must never be used except under careful supervision*, since too much of it mottles tooth enamel. Long-range studies have been devised to determine exactly how effective fluoride is when safe quantities of it are added to municipal water supplies.

CAN ANYTHING ELSE BE DONE TO PREVENT DENTAL CARIES?

A great deal. Many scientists are studying ways of attacking the bacteria which dissolve the enamel by producing acid. It is impractical to

use strong disinfectants to do this, for they would damage the gums, tongue, and lining of the mouth. Therefore attempts are being made to reduce the growth or weaken the activity of the bacteria by milder measures. One of the best ways of conquering an enemy is to starve him. This is an excellent weapon against tooth decay. *All cavities start from the outside.* The bacteria on the tooth surfaces demand carbohydrates (sugars) for food. Therefore, if you deprive them of carbohydrates, these bacteria will have nothing to convert to acid, and so the enamel will not be penetrated.

"But that's impossible," you will tell me. "All balanced diets contain starches and sugars."

You are quite right. Nevertheless, we can go a long way toward starving these bacteria without cutting down on our sugar intake too much. Reduction or elimination of rich, concentrated sticky sugars from the diet almost always diminishes the number of new cavities and the spread of existing ones. The worst enemies of the teeth are the all-day suckers, the chewy candies, and the sweetened chewing gums. Sweetened, carbonated beverages contain concentrated sugars. Also, pastries and pies and cookies should be limited, especially in those children with a strong tendency toward tooth decay. *A sweet tooth can ruin all the teeth!*

And yet most children love candy. It, and other sweets, are a symbol of love to a little child, and so we don't like to remove them entirely from his diet. I meet this problem in my family by restricting candy to a special treat once a day, before bedtime. It should be near bedtime because that is near brushing time with the toothbrush.

This brings us to another way of starving those acid-forming bacteria: that is, by removing sweets from the teeth promptly so that they won't serve as a source of food for hours. This removal of the bacterial food may be helped by (1) brushing, (2) rinsing the teeth with water, (3) use of dental tape or floss to remove large food particles.

KEEPING YOUR TEETH CLEAN

Your dentist will teach you how to do this. Preferences among them vary, but they usually agree on the following points:

1. *Brush your teeth.* How often? After breakfast, after the midday meal if possible, and after the evening meal. Probably you are in the habit of brushing your teeth the first thing in the morning and just before you go to bed at night. The latter custom isn't so bad; at least your teeth are clean during the eight or more hours you are asleep. But unless you brush your teeth after breakfast, food particles will cling to them all

day, providing nourishment for the bacteria that cause dental caries. It is all right to rinse your mouth or give your teeth a "lick and a promise" when you get up if it helps you to enjoy your breakfast. But save the real brushing until afterwards. If you go to work, take a folding toothbrush so you can brush your teeth at noon. Even rinsing them by swishing some water vigorously back and forth between and around your teeth after eating is helpful.

2. *Have two good toothbrushes.* I have often been astonished at the dilapidated toothbrushes I see hanging in modern, spic-and-span bathrooms! Two brushes are necessary so each of them gets a chance to dry out thoroughly. In this way the bristles will remain in good condition. Rinse the brush in cold water after using; food left on them provides an excellent breeding place for germs. Don't let your toothbrush come in contact with brushes that others have been using. Your dentist may recommend a certain brand of toothbrush. If you are selecting your own, remember that no brush, regardless of its size, shape and the distribution of bristles, can actually live up to the claim that it "conforms exactly to the shape and size of your teeth." Choose a brush that isn't too large, has a flat bristle surface, and a handle long enough so you can manipulate it.

3. *Use a safe dentifrice.* As yet, there is no "perfect" toothpaste or powder. Both the paste and the powder form of dentifrice are satisfactory, so choose the one you prefer. Pastes or powders containing harsh abrasives should be avoided, and so should those containing strong antiseptics, etc. Rely on the recommendation of your dentist or of nonprofit organizations such as the U. S. Public Health Service or the Council on Dental Therapeutics of the American Dental Association. Probably as good as the commercial dentifrices, and certainly less expensive, is $\frac{1}{2}$ teaspoonful of baking soda (bicarbonate of soda) and $\frac{1}{2}$ teaspoonful of salt dissolved in a glass of water, although the commercial ones have a more pleasing taste and aftereffect.

Many claims are made for dentifrices; new ones are constantly being discovered. Most dental authorities agree that the effect of any dentifrice is only temporary; even though it may destroy the germs in your mouth, the first glass of water you drink will wash it away, and so will your saliva. Ammoniated dentifrices may have some advantages, but these have yet to be proved conclusively. The same appears true for the so-called "antienzyme" dentifrices. Chlorophyll ones make your mouth feel fresh, but again, their effect is only temporary; they are no insurance against halitosis.

4. *Brush your teeth properly.* Don't brush across them in a scrubbing motion. This doesn't get rid of the food particles between the teeth, and may wear down the enamel or injure the gums if you are extremely vigorous about it. Most dentists suggest that you brush down on the upper teeth, up on the lower ones, holding the toothbrush at an angle that will enable you to avoid sticking the bristles into your gums; for example, place the bristles against the teeth, and pointing toward the gums, at an angle of about 45°. Start high enough, or low enough, to massage the gums as well as to brush the teeth. (Massaging the gums may cause them to bleed a little at first, but this should not happen after a few days.) Brush only a few teeth at a time, inside as well as out. Then clean the biting surface by putting the toothbrush square against it and jiggling it around.

Use dental floss, dental tape, "stim-u-dents" or the rubber points on the ends of certain toothbrushes, to remove the food from between the teeth. (I prefer dental tape.)

When you can't brush your teeth after eating, you can usually manage to rinse them thoroughly with water.

PYORRHEA

This is the name given to inflammation of the gums and the sockets of the jawbones in which the teeth lie. The first sign of it may be *gingivitis*, meaning an inflammation of the gums starting at the margins where the gums meet the necks of the teeth. If treated at this early stage, gingivitis will clear up before a more serious pyorrhea sets in. So be sure to visit your dentist immediately if your gums are red, bleed easily, and are tender to the touch. Bleeding gums may also indicate the presence of some diseases, which is an additional reason not to neglect this symptom. Proper brushing of the teeth and stimulation of the gums will go a long way toward preventing inflammation and may help to cure it.

However, it is important to see your dentist because gingivitis and pyorrhea can be due to a number of things. Although the exact cause is not known, many factors have been found to be at least partially responsible. These include: general poor health; breathing through the mouth; irregular teeth or badly fitting fillings that irritate the gums; and, perhaps, a diet consisting of too many soft foods and not enough "chewy" ones. Deposits of tartar (mainly phosphate of lime and food particles) on the margin between the gums and teeth irritate the gums, causing them to shrink and become a ready prey to infection. Scientists are trying to discover the diet least apt to cause tartar. Some believe that eating fresh fruit is advisable. However, once the tartar is formed, your dentist will have to scale it off.

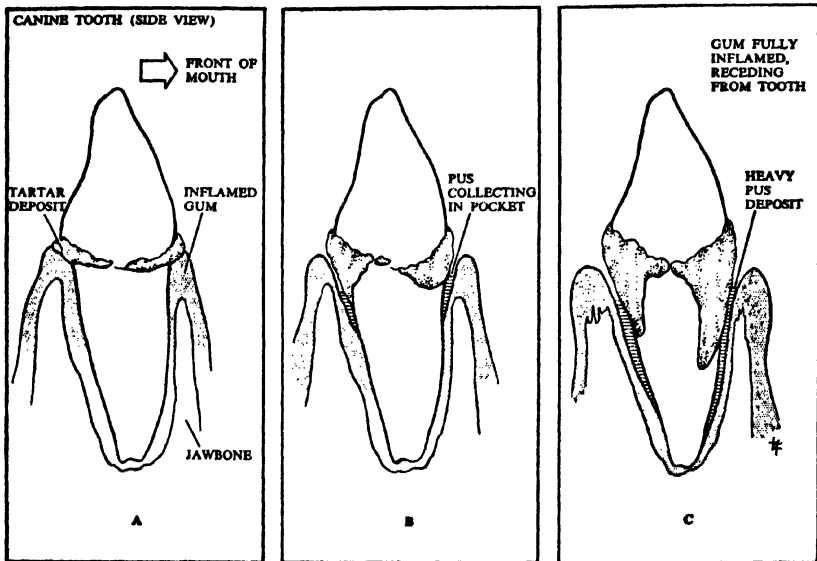


Illustration 4-5. EARLY AND ADVANCED PYORRHEA.

Unless it is checked, gingivitis tends to go into pyorrhea. The inflammation increases, destroying the attachments of the teeth, dissolving the bone around them, and forming pockets in which pus collects. The inflammation and pus cause the breath to become offensive; the foul taste of the mouth can destroy appetite. Pressure against the gums may cause visible quantities of pus to escape. Later, bone absorption becomes so extensive that the teeth grow loose and may fall out. Abscesses may form. As in the case of dental caries, infection may be carried through the body. (Illustration 4-5 shows early and advanced pyorrhea).

At one time it was believed that there was nothing to do about a full-fledged case of pyorrhea except to extract the teeth. Now this is recommended only when the condition has progressed so far as to injure the general health of the patient. However, treatment is not always successful and it is never "short and sweet." Some tissue damage always accompanies pyorrhea. Remember that the sooner treatment begins, the less damage there will be, and the better the chance of recovery.

In treating pyorrhea, the dentist will remove the tartar. He will irrigate the pus pockets, sometimes using penicillin to check the infection. He may try medication to encourage draining and harden the gums; and he may recommend mouth washes and show the patient how to massage and stimulate the gums. The dentist may have to extract a few teeth in

order to save the remainder; removing a tooth which has a pus pocket causes the gum around the tooth next to it to shrink, and eliminates the pocket.

TEETH AS FOCI (CENTERS) OF INFECTION

Not long ago some doctors were inclined to blame infected teeth for many diseases, especially arthritis, and very frequently recommended the extraction of "bad" teeth. Now we feel that infected teeth are apt to be an accessory factor rather than the primary cause. The decision to have your teeth pulled is a big one; as in the case of any operation, you should feel free to tell your dentist you want a consultation with your physician or a specialist before having it done. *Be sure to get your doctor's advice before having even one tooth pulled* if you are suffering from potentially dangerous diseases such as chronic heart trouble, rheumatic fever, high blood pressure, diabetes, or nephritis.

HALITOSIS (BAD BREATH)

This condition almost always accompanies pyorrhea. It can also be caused by teeth and gums which are not clean or in good condition. However, it may be due to inflamed tonsils, infections in or behind the nose, and conditions of the stomach or intestines. Also, certain foods cause odoriferous breath. Some diseases such as uremia produce foul breath. It is hard to tell whether or not one has halitosis, but there is no need to worry about it or spend time and money on "remedies," since your dentist or physician will tell you, and help you to find its cause and cure.

ARTIFICIAL TEETH

Dentures should be removed and cleaned and the mouth rinsed after every meal, if possible. Don't use hot water, as it may warp or crack them. Putting them in a glass of water overnight helps to keep them clean. Of course, artificial teeth should be checked regularly to make certain that they have not warped out of shape and that a change in your mouth or gums hasn't made them fit badly.

PERIODIC DENTAL CHECKUPS

How often should you see your dentist? *As often as necessary.* Let him decide. If dental decay is on a rampage or you are fighting off a threat-

ened case of pyorrhea, you may have to see him every month. At other times, a visit a year may suffice. The only definite piece of advice I can safely give you is to *make an appointment now*—because the chances are, if you are like the rest of us, you are probably overdue for a visit.

The dentist can save you time, money, and suffering. He can fill small cavities quickly and almost painlessly; he will take x-rays to discover tiny and easily repaired cavities; he will remove tartar before it irritates the gums.

A survey made in 1952 reveals the fact that people who stayed away from the dentist for three years lost *twice as many teeth* as those who had dental treatment every year; 16.7 per cent of the people in this group had to have *complete dentures* as compared with 1.9 per cent in the group that went every six months to a year.

Regular visits to the dentist will not only save you time, money, and suffering, but they will **SAVE YOUR TEETH!**

CHAPTER 5

Endocrine Glands

THE TERM *gland* is given to any part of the body that develops a secretion. There are two types of glands, the *exocrine* and the *endocrine*. *Lymph glands*, which I discuss on page 142, are more aptly described by the term *lymph nodes*, and belong in a different category.

Exocrine glands are usually called glands of external secretion. Among them are the *salivary glands* which pour saliva into the mouth, and the breast or *mammary glands* which produce milk. Glands of this type also secrete the digestive juices of the stomach, and bile.

While the glands of external secretion send their products through a duct or tube, the secretions which endocrine glands produce go directly into the blood stream. That is why they are called *endocrine glands*—*endo* means within—and why they are also referred to as ductless glands.

The existence of many of these glands has been recognized for ages, but their functions were, in the main, shrouded in mystery. Centuries ago, a connection was noticed between the sex glands, the testes and ovaries, and what are called the secondary sexual characteristics such as the beard in men and the breast in women. It was quite apparent, for example, that a boy whose testes had been destroyed failed to develop masculine characteristics. Now we know a great deal about the reasons for this, and about the other endocrine glands as well. We know that the substances (*hormones*) these glands create are chemical in nature. The exact chemical composition of most of them has been discovered by scientists, who can even create a few of them in the laboratory. They can be extracted in pure form from the gland, which is a great advantage in using them medically.

We have found out a great deal about what the various hormones do and about what happens to the body when a certain gland fails to function properly, creating too much or too little of its secretion. Although our knowledge of this subject is still incomplete, some of the most remarkable and dramatic treatments in medicine are possible because of advances in endocrinology.

SOME WONDERFUL RESULTS

Not very long ago a woman brought her baby to our hospital—a pathetic little boy with a strangely old face, dull eyes, and a tongue so thick it protruded from his mouth. Examination showed that the infant was a *cretin* (see Illustration 5-1, below).

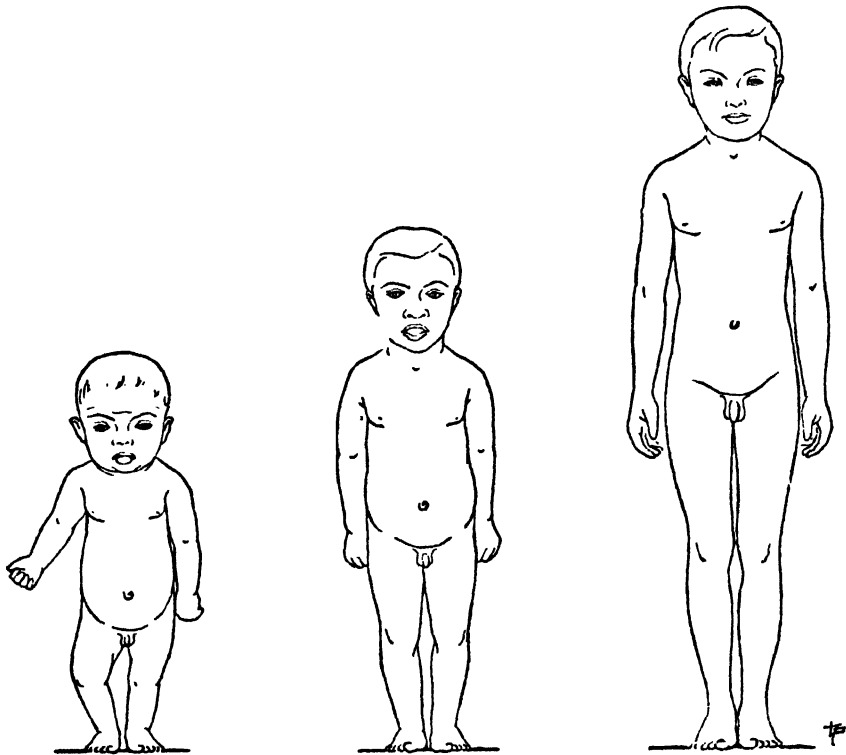


Illustration 5-1. TREATED AND UNTREATED CRETINISM.

LEFT: A typical cretin about a year old. Height approximately normal; puffiness about eyes; nose broadened; tongue thick and protruding; difficulty in sitting and standing. **CENTER:** Untreated cretin about ten years old. Height, 40 inches, far below normal; physically undeveloped; mentally deficient. **RIGHT:** Child about 10 years old, treated for cretinism regularly from the time symptoms were first observed. Height 55 inches, almost normal; physical development almost normal; mentally somewhat retarded.

When I was young, one of the families living in our neighborhood had a child of this type. My mother always insisted we must be kind to the

poor, dwarfed imbecile, saying, "To have such a child is the greatest tragedy that can happen to a woman."

Remembering this as I looked at the infant in the hospital, I thought how fortunate I was to be practicing medicine today rather than several generations ago. Then the mother would have been told that nothing could be done. Now, tablets containing an extract prepared from the thyroid glands of sheep will enable this baby to develop normally because the treatment can be started early enough.

Or take the case of a patient suffering from a malady called *Addison's disease*, which is destroying his adrenal glands. He is weak and emaciated, with a faint pulse, a low blood pressure, and discolored, darkened skin. Not too many years ago any doctor would have said he was doomed to die very soon. Today, watching the change taking place in him after the administration of the proper hormones from the adrenal cortex, one is inclined to think of the miracle of Lazarus rising from the dead.

Almost equally miraculous is the change that has taken place in regions which used to be referred to as the "*goiter belts*"—areas such as those in the Swiss Alps and around our own Great Lakes. Within our lifetime, visitors to such places had been shocked by the number of people they saw, including children, who were disfigured by these swellings of the thyroid gland, at the base of the throat, sometimes so large as to interfere with breathing. Now, merely because of the use of table salt to which a tiny amount of *iodine* has been added, simple goiter no longer characterizes the residents of these areas.

Stories about these and other remarkable cures spread rapidly. To them were added tall tales of imaginary cures. A wave of hysteria spread, carrying away even some of our scientists. People cried out that glands, wonderful glands, could do anything! The fountain of eternal youth was supposed to be just around the corner, in the form of transplanted monkey glands. Articles, books, and even plays were written dealing with this new way of staying young and virile forever.

These claims soon proved to be unfounded, and the monkey-gland craze went the way of other crazes. Yet even now aging men and women will ask whether they can't be rejuvenated by means of some gland or hormone. Many such people are victimized by quacks who can't do them any good, and frequently cause great harm. However, the problems of aging are being scientifically studied by a number of able doctors who are making valuable discoveries. (See chapter on The Later Years, page 788.)

While many glandular disturbances can be cured, it is always dangerous to attempt treatment except under a doctor's direction. It is even risky to use a "hormone face cream" to beautify the complexion, because

if this actually does contain a hormone, it may disturb the delicate balance of endocrine functioning.

THE FAMILY OF ENDOCRINE GLANDS

The endocrine glands and their location in the body are shown in Illustration 5-2 below. These glands include:

The *pituitary*, which consists of three parts.

The *thyroid*.

The *parathyroids*, which are actually four small glands quite different from, but attached to, the thyroid.

The *islets of Langerhans*, tiny cells forming "islands" in the pancreas.

The *adrenal glands*, one on each side above each kidney; each gland consists of two different parts.

The *gonads* or *sex glands*, consisting of the testes in men and the ovaries in women.

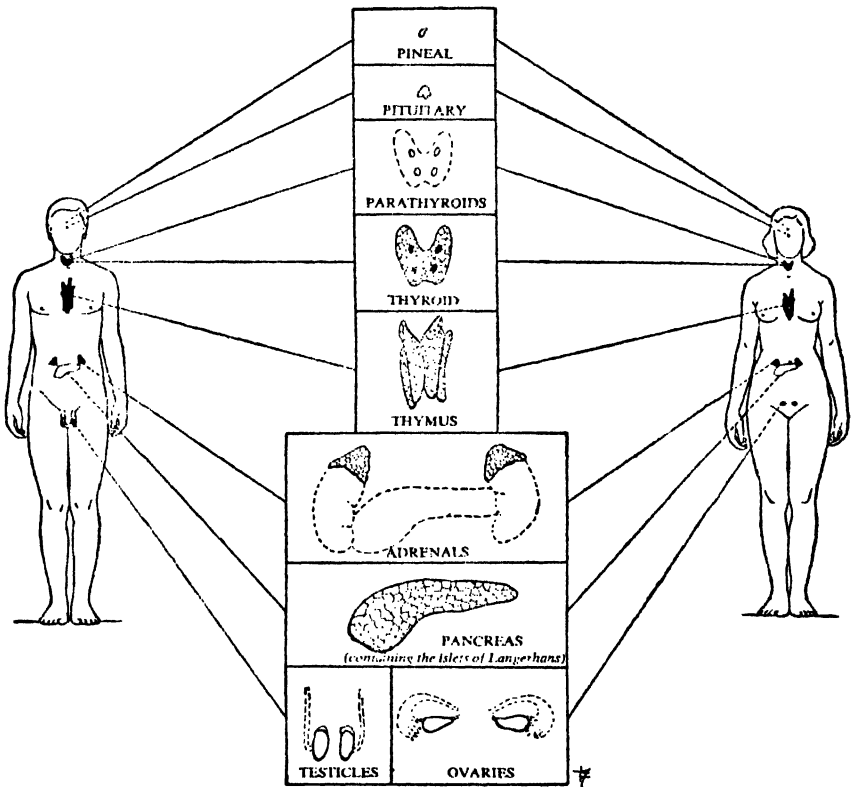


Illustration 5-2. LOCATION OF THE ENDOCRINE GLANDS.

In addition, there are the *pineal* gland in the upper, back part of the brain, and the *thymus* gland, which is found below the thyroid in young people and later atrophies (withers away). Very little is known as yet about the pineal and thymus, although they are believed to belong to the endocrine gland family.

The hormones which these glands send through the blood to the various parts of the body act like messengers. (The word *hormone* comes from the Greek word meaning to excite or to stir up.) They don't actually create processes, but rather tell certain processes to speed up or to slow down, encouraging or discouraging them. They exert their influence on such fundamental processes as growth, reproduction, and sex. How great a part they play in our mental and emotional states is not yet fully understood. However, it is known that some glandular disturbances cause mental conditions or personality changes, and that these disappear with treatment.

The endocrine glands form an *interdependent* system. In that respect they are like a family: what happens to one can affect them all. Again, we don't know exactly *how* this happens, but it has been shown that the removal of one gland often alters the functioning of them all. Similarly, an increase in the functioning of one will change the others. That is one reason why *it is extremely dangerous to dose one's self with hormones, glandular tissue or extract*, or whatever it may be called, for the purpose of reducing, getting rid of excess hair, developing the breasts, becoming more virile, or for any other reason.

The following table lists a number of the hormones produced by the endocrine glands, and some of the diseases resulting when a gland functions too actively or too little.

Gland	Hormone	Disease caused by	
		Overactivity	Underactivity
Thyroid	Thyroxin	Exophthalmic goiter (also called Graves' disease or hyper-thyroidism).	Myxedema. Cretinism (in infants).
Parathyroid	Parathormone	Hyperparathyroidism (osteitis fibrosa cystica).	Parathyroid tetany.
Islets of Langerhans	Insulin	Hyperinsulinism.	Diabetes mellitus.

Adrenal		Cushing's syndrome.	Addison's disease.
(a) Cortex	Cortin, etc.	Adrenal hypercorticism.	
		Adrenal virilism.	
(b) Medulla	Adrenalin	Hyperadrenalism.	May contribute to symptoms of Addison's disease.
		Pheochromocytoma.	
Gonads			
Female (ovary)	Estrogen	Menstrual	Menopause.
—or—	(estrin)	irregularities.	
Male (testis)	Androgen	Excessive virilism.	Eunuchism.
	(testosterone)		
Pituitary			
(a) Anterior lobe	Corticotropin	Cushing's syndrome	Dwarfism.
	Thyrotropin	(hyperadrenalism).	Simmond's disease.
	Gonadotropins	Gigantism	
	Lactogenic hormone, prolactin	(acromegaly).	
(b) Posterior lobe	Pitressin (Pitocin)		Diabetes insipidus.

THE ISLETS OF LANGERHANS IN THE PANCREAS

Diabetes is the most familiar of the diseases caused by an endocrine gland disorder. Once a major cause of death in children and young adults, and a seriously disabling condition in many older people, diabetes (or, to give it its full name, *diabetes mellitus*) has been brought under control. This was made possible in the early 1920's by the discoveries of a young Canadian doctor, Frederick G. Banting, assisted by Dr. Charles H. Best.

Many years ago, a scientist named Langerhans studied small clusters of cells that formed what he called "islets" scattered throughout the *pancreas*. The pancreas is the flat organ situated below and behind the stomach; the pancreases of cows are the sweetbreads of our dinner menus. Although the masses of cells which are now called the islets (or islands) of Langerhans lie within the pancreas, their function is entirely different. The main part of the pancreas produces juices which play a

major part in the digestion of proteins and fats, while the islets control the use of sugar by the body.

CAUSE OF DIABETES

Diabetes is not a contagious or infectious disease. It is due to the failure of the body to provide something which it needs.

The islets of Langerhans secrete the hormone called *insulin*. This hormone enables the body to use (or "burn") sugar and starch after they have been converted into glucose by the digestive juices. The body has to utilize this glucose (sugar) in order to provide heat and energy, and to help in the utilization of other foods. Any sugar the normal body does not immediately need is stored in the tissues, to be drawn on later—like money in the bank.

When the islets of Langerhans fail to provide the insulin to "spark" this process, the sugar passes, unused, into the blood and is eliminated in the urine. The quantity of urine eliminated increases, causing the diabetic to be thirsty and drink more water, which in turn is quickly eliminated.

We do not know all the reasons why the islets of Langerhans may fail to provide sufficient insulin. A disease of the pancreas can be responsible. There is a tendency for diabetes to run in families; certain of us may have less ability to produce insulin than others. Diabetes occurs most frequently in people who are overweight; the islets of Langerhans, trying to make enough insulin for the tremendous amount of sugar and starch fat people consume, may be simply unequal to the task and lie down on the job!

UNTREATED DIABETES

Without insulin and its ability to utilize sugars, the body is deprived of an essential food. No matter how much the diabetic eats—and he is apt to eat a great deal—he is unable to utilize the food he eats, and so he is always hungry. He is also, as I have said, always thirsty. The word *diabetes*, which comes from a Greek word meaning *fountain*, was used to describe this disease because of the excessive urination which is one of its main symptoms.

Sugar piles up in the blood faster than the body can get rid of it in the urine. This makes the individual less capable of coping with infections of any kind. If large amounts of sugar accumulate in the blood, the patient will become tired, weak, and nauseated; these are the signs of *diabetic acidosis* which precedes *diabetic coma*, usually resulting in

death within about 24 hours. (Remember, I am describing *untreated* diabetes.)

SYMPTOMS OF DIABETES

Everyone should be alert for the following symptoms of diabetes:

Excessive thirst and urination (in children, bed-wetting may be a sign)

Loss of weight (especially where there is an increased consumption of food)

Weakness, listlessness, fatigue

Decreased resistance to infection—often manifested in frequent boils or carbuncles; or, especially in elderly people, in gangrenous conditions particularly in the feet

Itching of the genitals

Indications of approaching diabetic acidosis and coma (I describe these more fully on page 91)

Even in its early, mild stages, diabetes can be detected by testing the urine (and the blood) for sugar. A complete physical examination should always include an analysis of the urine for this purpose. A good clinic provides low-cost tests for sugar in the urine and blood. The American Diabetic Association conducts frequent drives for diabetes detection. In some cities, it has set up diabetes detection centers, of which people should take advantage. It's so easy to find out whether you have a tendency to diabetes, which can usually be handled without difficulty if recognized early!

TREATMENT OF DIABETES BY DIET

Until about thirty years ago, the only thing that could be done for diabetics was to eliminate, as nearly as possible, sugars and starches from their diet. The small amount of insulin manufactured in all but the most severe cases might be enough to handle the decreased amount of work it was called upon to do.

This treatment is still the best and simplest one for mild, borderline cases of diabetes in adults. The doctor prescribes a diet which the patient follows exactly, testing the urine to discover how much starch and sugar he can utilize without having any excess sugar spill over into the urine. If he sticks to such a diet, testing his urine regularly, the borderline diabetic can keep his disease under control. Sometimes, especially in obese individuals who lose weight on their diets, the condition may clear up; the rested islets of Langerhans may once more take up the task that had been too much for them!

Never attempt to treat even the mildest form of diabetes yourself. The diet must be exact, and only a doctor is capable of working out its details with you. To be successful, treatment by diet requires a capable physician plus a cooperating patient.

Diet alone can never control severe diabetes, or diabetes in children. Too little insulin is provided by the body in such cases to take care of even the small amount of starch and sugar in any diet. The body *has* to have a small amount of sugar; larger quantities are essential to the growth and development of children. In the past, children with diabetes, and adults with severe cases, were doomed to waste away, or die in a coma.

INSULIN TREATMENT

Today, because insulin can be obtained, even the most severe types of diabetes can be controlled. Diabetic children can grow to healthy man- or womanhood. Diabetics can live as normally and actively as anyone else. The individual who cannot manufacture his own insulin can substitute for it the identical hormone extracted from animal glands.

This insulin must be injected under the skin. It is useless if taken by mouth. It is a natural hormone, not in any sense a "drug" or form of "dope"; it is never habit-forming, as are narcotics.

The doctor can teach the average individual how to inject insulin into himself, or into a member of the family not capable of doing so. He can also show the diabetic how to make the simple test to determine whether or not there is sugar in his urine. This is absolutely essential as the amount of insulin required by his body may decrease, or it may increase, due to, for example, *an infection*.

Even with injections of insulin, the diabetic must learn to regulate his diet. This may scarcely vary from the diet of the normal person. The same kinds of food are eaten; nothing is eliminated. The only difference lies in the fact that the day's menu must be planned, because the same amount of sugar must be eaten every day. By keeping the daily quantity of sugar constant, the doctor can tell how much insulin the patient needs in his daily dose. It is almost impossible, from a practical point of view, for a diabetic to vary the amount of insulin he takes because he wants to eat more or less sugar than his regular amount. He cannot take extra insulin "to be on the safe side" because this is far from safe. An *insulin reaction* will probably result.

If too much insulin is taken (or too little food eaten to utilize the amount of insulin injected), the blood sugar becomes low and the urine contains no sugar instead of the small amount normally present. The

result is shaky tremors, cold sweats, and an extreme feeling of hunger. In severe cases, *insulin shock* results. An insulin reaction calls for emergency treatment. Eat a few lumps of sugar or drink a glass of orange juice with sugar added. No insulin should be taken until the reaction has completely passed. Diabetics who take insulin should carry a few lumps of sugar with them so that, in case they are forced to miss a meal or two, and feel a reaction coming on, they can prevent the condition from becoming serious.

Diabetic acidosis is just the opposite of an insulin reaction. People sometimes have difficulty in distinguishing between the two especially since, in extreme cases, coma may result. Diabetic acidosis is caused by *too much* sugar (and not enough insulin). This may happen if injections are neglected or too much food is eaten. The symptoms are deep breathing, tremendous thirst, dryness of the skin and tongue, and often pains in the back and stomach as well as nausea and vomiting. In diabetic acidosis the urine always contains a large amount of sugar; in an insulin reaction the urine is always free of sugar. Diabetic acidosis is worse than ordinary untreated diabetes: that is, the disease is far out of control, and has become extreme and dangerous.

WHAT TO DO FOR DIABETIC ACIDOSIS

Call your doctor. Until he arrives, do the following: Go to bed and keep quiet and warm. Drink a cup of warm fluid—soup or broth—every hour.

Change to an emergency diet consisting of milk and crackers and either poached eggs on toast and cocoa, or any bland vegetables you can tolerate. These feedings should be taken about every two hours. The purpose is to make certain you get enough nourishment, in spite of nausea and vomiting.

Take insulin. Get the required dosage from the doctor over the phone. If he cannot be reached, take 20 units of regular insulin at once and 10 to 15 units every six hours until the urine is clear or shows only traces of sugar.

If improvement doesn't set in fast, and your doctor cannot be reached, go by taxi, ambulance—or if by your own automobile, have *someone helping you*—to the nearest good hospital.

In neglected cases, diabetic coma may result. Unconsciousness sets in. This is an emergency calling for immediate medical attention. A person in a coma should be rushed to the doctor or the hospital.

One of the main causes of this condition is overeating or neglecting to take insulin. Like most of the problems facing the diabetic, this is

usually the result of negligence. The diabetic person must learn to be strong-willed enough to avoid going on food sprees, and must never neglect his insulin injections. (Similarly, he must not skip meals, thus running the risk of an insulin reaction.) Diabetes is no longer a dangerous, disabling disease, *provided* the diabetic has enough self-control and good sense to adhere strictly to his diet and the few rules his physician has given him.

Diabetic acidosis or coma can also be caused by infections, or by surgery and dental extractions performed without adequate preparation. If any operations or dental extractions are needed, the diabetic should make certain his condition is known to the dentist or doctor who will then be able to take the proper precautions. Sensible diabetics write "I am a diabetic" on their identification cards, not because they are unduly nervous about accidents but in the same manner that healthy people carry the address of the relative to be notified in case something should happen to them.

The diabetic should also be careful not to catch colds and should avoid people with infectious diseases. He should get plenty of rest and sleep. An infection diminishes the efficacy of insulin and may bring on acidosis. One way to avoid infections of the skin is to be clean. Sensible diabetics are among the cleanest people in the world.

CARE OF FEET

A great deal of emphasis is placed on foot care because there is danger of gangrene if the feet are neglected. This is because diabetes often brings about poor circulation, especially in the feet and legs. The feet are exposed to many possible avenues of infection such as corns, calluses, blisters, cuts, and ingrown toenails. Any of these may result in gangrene.

The older the diabetic person, the more attention his feet require. Diabetics over 45 should be particularly careful about carrying out the following measures:

Wash the feet daily with soap and water, then dry thoroughly.

Massage daily with lanolin, rubbing from the toes to the knees.

Raise yourself on your toes 20 times, twice a day.

Treat ingrown toenails by the method described on page 146.

Have toenails cut carefully by someone other than yourself, preferably a chiropodist who must be told that you are diabetic.

Wear shoes that are comfortable, and wide enough not to rub against the feet.

Stockings should be washed daily, and should be free of imperfections that may irritate the skin.

TRY TO AVOID DIABETES—OR LEARN TO LIVE WITH IT

Although the tendency toward diabetes may be inherited, you can help to avoid the disease by keeping slim. Overweight people, especially women in their forties, seem to be more susceptible to diabetes than underweight ones. One of the many good reasons not to put on fat as you get older!

You can have a good, active life even if you have diabetes. Even though you cannot be cured, you can get along very well with your diabetes once you make up your mind to it. Keep in touch with your doctor. Stick to your diet. Take your insulin regularly. And most important of all, exercise your will power. You will probably discover there is a great deal of truth to the saying "the best way to lead a long, healthy life is to have an incurable disease and take care of it." (For further information, write to the American Diabetes Association, Inc., 1 E. 45th Street, New York 17, N. Y.)

THE THYROID GLAND

The thyroid gland is situated in front of the throat, below the Adam's apple and just above the breastbone. It is roughly U-shaped, the ends of the U flaring out to a lobe about the size of the big toe.

The thyroid is extremely important in maintaining the all-round health of the body. It is like a little machine that regulates the rate at which the body uses oxygen taken in by breathing. It also controls the rate at which the various organs of the body function, and the speed with which the body uses food.

Too much thyroid secretion would make you "speed up," so that you would become overactive and nervous, your heart would palpitate, and you would be kept at so high a pitch you would not be able to relax and sleep well. Too little thyroid output would make you drowsy, fatigued and slow moving; you might gain weight, develop coarse features and a thick, scaly skin.

Myxedema is caused by an underfunctioning thyroid. The patient is sluggish physically and mentally; he cannot stand the cold; sometimes the tongue is so large and thick that it sticks out of the mouth. Treatment usually brings marked improvement.

Some babies are born with thyroid deficiency. Any infant who seems to develop too slowly in following objects with his eyes or holding his head erect should be seen by a doctor. Do not be alarmed by the possibility that your child has thyroid deficiency, for it is curable. However, the earlier such a child is treated, the better the chances of a complete cure. Prompt treatment brings a truly dramatic improvement.

Simple Goiter. The thyroid gland needs iodine in order to function normally. Without sufficient iodine, the gland cannot manufacture the normal quantity of its hormone (called *thyroxin*). In an effort to make up for this, the gland becomes enlarged. As the swelling continues, a noticeable lump appears in the throat. This swelling or goiter may be large enough to interfere with breathing or swallowing.

The hormone of the thyroid gland contains about 65% iodine, but the amount of iodine needed in food to avoid goiter is very small. The amount of *iodized* table salt we use in meals is sufficient, even in areas where the soil is completely lacking in natural iodine. Too much iodine may lead to a skin eruption. Although consuming iodine does not cure a simple goiter, it will prevent one or will stop an existing goiter from getting larger. Anyone with even a small goiter should consult a doctor.

It is especially important for expectant mothers who live in regions such as the Rocky Mountain states, the Great Lakes Basin, or the upper Mississippi River Valley, where the soil is lacking in iodine, to follow the doctor's orders about the amount of iodine they need. Insufficient iodine in the diet may cause a pregnant woman to produce a child with thyroid deficiency. However, all expectant mothers develop a slight enlargement of the thyroid, and this should not cause them to worry unduly. Children whose diets lack iodine may show signs of goiter when they reach adolescence. Girls and women are more susceptible than are boys and men.

Hyperthyroidism. A more serious type of goiter develops when the thyroid manufactures too much hormone. *Hyper* means too much; hence the disorder is called hyperthyroidism. People with hyperthyroidism are nervous and irritable and suffer from insomnia. Heat makes them extremely uncomfortable, so that they frequently sleep with the covers thrown off, even in cool weather. The excess secretion also produces an overactive heart, manifesting itself in palpitation (which people frequently mistake for a true cardiac condition).

Another symptom of this disease is loss of weight—as much as twenty pounds or even more—in spite of increased hunger. (This unusual combination is also a symptom of diabetes, as I have just explained on page 89.)

Other names for hyperthyroidism are thyrotoxicosis and Graves' disease. Hyperthyroidism is sometimes called *exophthalmic goiter* because many patients have protruding eyes, causing them to look continually startled. This is a fairly common symptom. (Illustration 5-3).

For many years the only treatment was surgery; about 90% of the gland was removed, and most patients were cured. Today, radioactive iodine is employed to cut down the gland's activity. Like ordinary iodine, radioactive iodine is taken up by the thyroid. The radiation given off

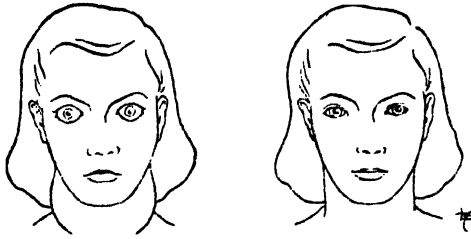


Illustration 5-3. EXOPHTHALMIC GOITER.

LEFT: Characteristic staring eyes and enlarged area in the neck. RIGHT: A healthy girl.

within the gland suppresses its functioning. A medicine called propylthiouracil is sometimes used in treatment, either by itself or in preparation for surgery. (Operations on the thyroid may be dangerous, and should be performed by specialists: see page 572.)

Any enlargement or lump in the throat should be examined by a physician. Do not make the diagnosis yourself and decide you have thyroid trouble, and what kind it is. The tests for glandular disturbances of any kind are not simple. Many laboratory studies and examinations may be necessary before your doctor can determine the nature of the illness. One of the tests most frequently employed is the *basal metabolism* test, which records the amount of oxygen you use. In hyperthyroidism this amount is increased, and in myxedema the absorption of oxygen during breathing decreases. One of the newest laboratory tests for thyroid disorders utilizes radioactive iodine as a *tracer*. The severity of the disease can be determined by the amount of iodine taken up by the thyroid gland: an overactive gland will use up more iodine, an underactive one will consume less.

THE PARATHYROID GLANDS

These tiny glands, about the size of a very small pea, and usually found in clusters of four, are embedded near the base of the thyroid. They control the excretion in urine of calcium and phosphorus which are derived from lime salts and which make the bones hard.

The parathyroid glands are so much smaller than the thyroid that before doctors were certain of their presence they were sometimes removed with the thyroid when it had to be taken out surgically. The significance and location of the parathyroids is well known today, and there is little danger of their accidental removal.

In **parathyroid deficiency** the calcium regulation is disturbed and the muscles become subjected to spasms (**tetany**). In severe cases convulsions and death may result. The administration of the parathyroid hormone, or certain synthetically manufactured compounds with similar actions, or a potent vitamin D preparation, will keep the calcium output normal and stop the spasms. Feeding calcium is extremely helpful in such cases. **Parathyroid tumors** cause **hyperparathyroidism** with generalized depletion of calcium, sometimes kidney stones, and in some cases a cystic degeneration of the bones.

THE SEX GLANDS (GONADS)

The gonads (from the Greek word *gonē*, meaning *seed*) consist of the *testes* in men and the *ovaries* in women. Besides producing *sperm* and *ova*, the sex glands make the hormones which are responsible for the special characteristics of the male and female.

Human beings have always been aware of the outward physical difference between men and women, but understanding the cause of these differences has been a slow process. The discovery and understanding of the gonads and their hormones have gradually removed much of the mystery from sexual differentiation.

THE MALE SEX GLANDS

The male sex glands consist of two testes which lie enclosed in the scrotal sac of skin, just below the penis. They secrete semen containing the male element of reproduction, the sperm, and also the very important male sex hormone, *testosterone*.

Testosterone was one of the earliest known of the endocrine hormones. This followed logically from the fact that the most easily observed effect of glandular deficiency was that following removal of the testes. It has been known for centuries that if the testes of a boy were removed or destroyed *before puberty*, he would not develop masculine characteristics. He would have a gentle personality, and a soft, often high-pitched voice. His chest would be narrow and flat, his muscles undeveloped, with excess fat on the hips, abdomen, and breasts. He would lack hair on the face, armpits, and pubic region. His penis would be small or underdeveloped, and he would fail to develop sexual desire, or lose what he did have; he would be impotent. In the past, especially in the Orient and Middle East, it was customary to castrate (remove the testes from) a number of boys so that they could be trusted to take care of the women of the household. They were called eunuchs, from

the Greek word *eunouchos*, meaning guarding the couch. Boys were also castrated to keep their voices from changing, and thus provide sopranos for male choirs. Castration is still practiced on animals to make them easier to manage or so that their flesh will be plump and tender.

In addition to affecting the male sex organs and secondary sexual characteristics, testosterone stimulates muscular and bone development, and helps maintain the strength of muscles.

If testosterone is injected into a female animal, certain masculine characteristics develop, and the female hormonal function is inhibited. This is only temporary; the female functioning is restored when testosterone injections are terminated.

If testosterone is injected into a eunuch or a man with an underactive secretion, the size of the sexual organ increases, the secondary sexual characteristics develop, and there is an increase in sexual desire and potency. The effect of injected testosterone is transitory. People suffering from a lack of this hormone must be treated medically for their entire lives. (The growth of the testes is also stimulated by pituitary hormones, described on page 102.)

"I thought you said it was impossible to increase or restore virility, and this seems to be a way to do it!" you may be saying. It is true that *certain injections are beneficial in cases of hormone deficiency*. It has also been found that implanting sex glands in male animals may lead to a temporary surge of sexual activity. However, injections of testosterone are not only unsatisfactory and ineffectual as far as "rejuvenation" is concerned, but they may be dangerous, leading to tumors of the *prostate*. (See page 627.) Let me repeat: the process of aging is not confined to the sexual function, and cannot be halted by a single hormone or any combination of hormones so far discovered.

Actually, many men can reproduce at the age of seventy or older. The feeling of decline which some elderly men experience is more apt to be due to other factors than to the sex glands—either some other physical ailment or a psychological difficulty. A thorough medical checkup is advisable rather than costly and dangerous injections.

Impotence in Men. The problem of impotence, or the inability to have sexual relations, is very difficult and complicated. It can occur if the testicles are removed, and it may result from a disease of the testes or the pituitary gland. Some maladies of the nervous system cause impotence. Most frequently, however, impotence is due to *psychological factors which inhibit sexual ability*. In a great majority of cases of impotence, the testes are present and normal, as is the entire endocrine system. Such impotent individuals suffer from emotional troubles or psychoneuroses, as explained further in Chapter 12. Proper treatment of these conditions often restores the sexual function. Anyone suffering from

impotence should have a complete examination by a doctor who is qualified to understand emotional factors. A competent family doctor or internist should study the problem first and, if necessary, refer the patient for psychotherapy or endocrine treatment.

Sterility in Men. Sterility means the inability to have children; it occurs in some men who are by no means impotent. It may be due to the failure (for a number of causes) to produce sperm that are sufficiently strong or numerous to reach and fertilize the female cell. Only one healthy sperm is necessary for that, and the male usually provides from 3,000,000 to 4,000,000 sperm in each sexual act. However, the journey these cells must take to reach the female cell is so hazardous for them that a great many lively ones are needed to ensure there being a survivor in the proper place at the proper time. Ways have been found to help this to take place, and I discuss them, and the problem of sterility in general, on page 318.

THE FEMALE SEX GLANDS

The female sex glands are called the *ovaries*. Like the testes, there are two of them. Besides producing ova, the eggs, the ovaries secrete hormones necessary both for the feminine characteristics and for reproduction.

The plum-sized ovaries lie in the front portion of the abdomen, below the navel. Each ovary is connected with the womb by a tube called the *Fallopian tube*. These tubes are hollow and open out into the womb, or uterus, which is a pear-shaped organ meant to house the unborn child. In the diagram on page 129, the womb, tubes, and ovaries look like the head of an animal with two horns.

The hormones produced by the ovaries are called *estrogen* and *progesterone*. There is very little secretion of them before puberty and after the menopause. They are produced abundantly, however, during a woman's childbearing years which start around the age of twelve to fourteen and usually end between the ages of forty and fifty. During that period, a woman has her regular monthly cycles.

Menstruation and Ovulation. Menstruation is the discharge from the body of the extra blood and tissue which have been built up in preparation for a baby and have not been used. Menstrual cycles vary, the time from one menstrual period to the next usually being about 28 days. Differences in the length of this cycle are not unusual, nor are they necessarily to be considered abnormal. The 28-day cycle is merely an average one, rather than being indicative of good health.

Doctors customarily start counting the first day of menstruation as Day 1. During the first 14 days of this cycle, the ovary contains a

follicle—a small hollow ball the size of a pinhead. Within it lies an egg. This follicle grows during these 14 days until it is several times its original size, becoming as large as a pea. While it is growing, the follicle makes the hormone *estrogen*. The menstrual cycle in general and the growth of the follicle are under the control of the pituitary gland. On about Day 14, stimulated by the pituitary gland, the follicle bursts and the egg is discharged from the ovary. The discharged egg enters the tube on its way down to the uterus. If any sperm are present in the Fallopian tubes at that time, fertilization may take place in the tube. The fertilized egg continues its journey to the uterus. Once there, it plants itself in the wall of the uterus. Meanwhile, the ruptured follicle from which the egg was discharged is transformed into a yellowish, solid ball now called the *corpus luteum* (Latin: yellow body). The corpus luteum produces a second hormone, *progesterone*.

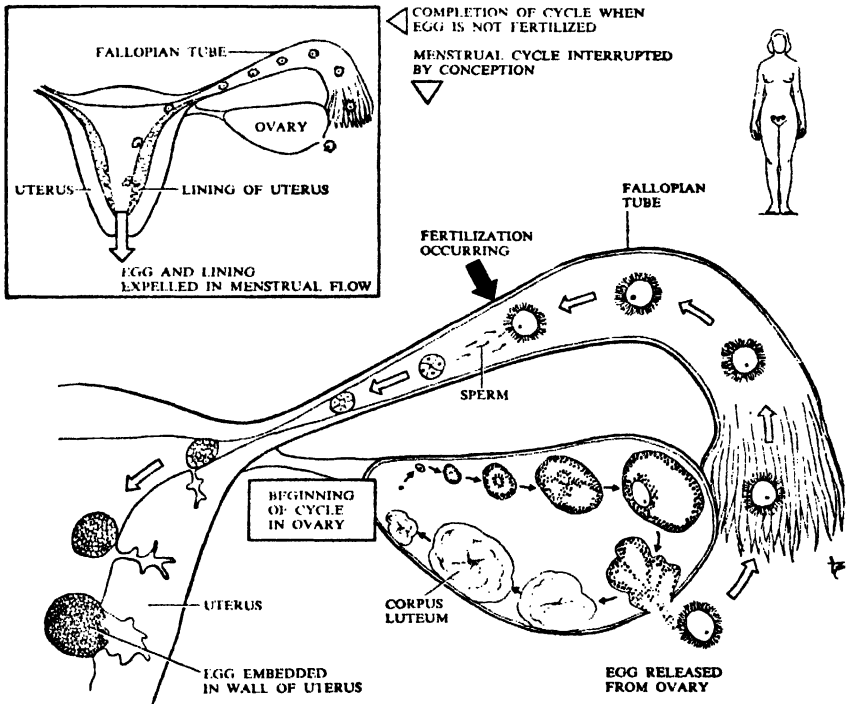


Illustration 5-4. DIAGRAM OF THE MENSTRUAL CYCLE.

Estrogen and progesterone play two important roles in the female body. They are greatly responsible for feminine characteristics, and they help build up the lining of the uterus for receiving and nourishing

the fertilized egg. The lining becomes thicker and develops a rich blood supply to feed the unborn baby.

During the last 14 days of the cycle, the two hormones are produced by the corpus luteum to stimulate the manufacture of the tissues and blood supply in the uterus. The fertilized egg in turn secretes its own hormone. This hormone helps the corpus luteum to persist and continue making estrogen and progesterone. In other words, this is like a chain reaction, with one hormone prodding the other two hormones to keep going. The hormone from the fertilized egg is necessary because at the end of the 28-day cycle the pituitary "resigns" and will no longer maintain the corpus luteum. So the fertilized egg has to take over the job.

If pregnancy has not occurred, the corpus luteum degenerates and its secretions stop abruptly. With the stopping of the hormones, the rich supply built up in the lining of the uterus sloughs off and leaves the body. This bleeding is called menstruation. (I discuss menstruation and menstrual difficulties in detail on page 762.)

Menopause. The menopause, or change of life, is as natural for women as is menstruation or the bearing of children. I want to do everything I can to dispel the dread which many women feel regarding this change in their reproductive systems. I discuss this fully on page 766. Nothing more disastrous occurs than the tapering off and stopping of the monthly cycle!

True, certain natural changes do take place. Estrogen secretion is reduced. The follicles no longer release an egg each month. Menstruation ceases. It may end suddenly, or gradually—skipping a few months, or stopping and then returning for several months. After the menopause has been well established for about a year, there should be no more bleeding. (Be sure to consult a doctor *immediately* if bleeding or "spotting" should occur. This may be a danger signal of cancer or some other disorder requiring prompt medical attention. See page 624.)

Unfounded fears concerning the menopause are largely responsible for the emotional disturbances which some women experience during this period. Certain physical symptoms may be present because of the glandular changes which are taking place. If they become troublesome, they can be relieved by hormonal injections or tablets—but *never without a doctor's prescription*. I discuss menopausal symptoms, both physical and emotional, on page 767.

THE ADRENAL GLANDS

These glands fit like small cups on the top of each of the two kidneys (Illustration 5-2, page 85). Each adrenal gland is divided into

two parts: the *cortex* or outer portion, and the *medulla*, the central section. The cortex and the medulla produce hormones of different natures.

The medulla of the adrenal gland produces the hormone *epinephrine*, more commonly called *adrenalin*. The output of this hormone is immediately stepped up when you become angry, fearful, or excited. This makes the heart beat faster and produces chemical changes that prepare the body for action. You have undoubtedly observed the effects of adrenalin, when you were angry or alarmed, for it makes you feel tense and on edge; or perhaps you have said, "I was so scared (or angry) that I did things I couldn't possibly have been able to do normally."

The three main functions of the adrenal *cortex* and its hormone, *cortin*, are:

- 1) To control the salt and water content of the body.
- 2) To control the sugar and protein metabolism, acting exactly opposite to insulin. In some tumors of the adrenal cortex, with a condition called **Cushing's syndrome**, diabetes occurs.
- 3) The cortex appears also to secrete a hormone similar to that put out by the testes. In certain tumors of the cortex, females develop marked masculine characteristics such as a deep voice and hair on the face; menstruation may slow down or cease. In men with such tumors the secondary sex characteristics may become more pronounced.

Atrophy or underfunction of the adrenal cortex produces a rare disease called **Addison's disease** which I discuss on page 84. The recently developed *cortisone* and older preparations which have been available for some time make it possible to control Addison's disease and enable the afflicted person to lead a normal life.

The pituitary hormone, ACTH, stimulates secretion of hormones by the normal adrenal glands. Cortisone, an adrenal hormone preparation, can replenish the body's supply when the adrenal glands are diseased. These hormones also appear to bring about favorable results in the treatment of many other diseases, including rheumatic fever, arthritis, and asthma. (See pages 417, 667 and 670). The reason for these remarkable effects is not yet clearly understood. People with the above-mentioned diseases do not appear to be deficient in adrenal hormones, yet adding to their normal amount brings about, in some cases, striking improvement.

THE PITUITARY GLAND

This gland is located at the base of the brain. Imagine a line drawn through your head from ear to ear and another line going backward from between your eyes. The pituitary gland lies at the spot where these

two lines cross. It is about the size of a pea. It consists of an anterior lobe, an intermediate part, and a posterior lobe.

One hormone of the pituitary gland has a powerful effect on growth of the body in general. Another hormone regulates the thyroid. Pituitary hormones stimulate the development of the ovaries and the testes, making sexual development and reproduction possible. Still another hormone stimulates the milk production of the breasts. I have just mentioned the pituitary hormone which controls the adrenal glands, the adrenocorticotrophic hormone, popularly known as ACTH.

DISEASES OF THE PITUITARY GLAND

These diseases are fortunately quite rare. Too little pituitary secretion will cause certain types of **dwarfism**, while too much stimulates the body to grow to gigantic proportions. Pituitary tumors may press on the optic nerves and cause some loss of vision and headaches. **Acromegaly**, in which the bones increase in size, particularly those of the face and hands and feet, is caused by an overactive pituitary gland (see Illustration 5-5, below).

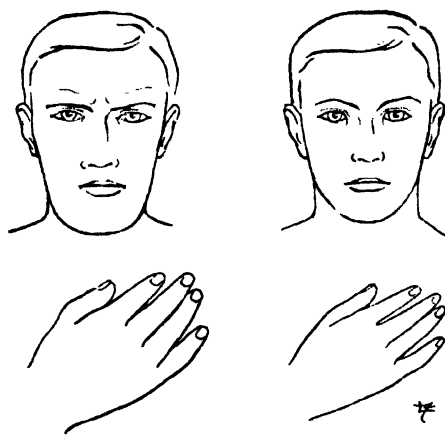


Illustration 5-5. ACROMEGALY.

LEFT: A typical case. The lower jaw and the bones of the hand are enlarged; the nose and the ridges above the eyes are thickened. **RIGHT:** A normal man of the same size.

tion 5-5, above). **Cushing's disease** is also sometimes caused in this way. Underactivity of the front section of this complex gland leads to a thin, malnourished condition called **Simmond's disease**. Underactivity, or pituitary insufficiency, can cause children to be excessively fat. In

some cases a condition called **Fröhlich's syndrome** results; these children are excessively fat, underdeveloped sexually, and mentally bright although unusual. If given an extract of pituitary gland in time, they will become normal and be spared unhappy lives. If the pituitary secretion decreases after puberty, fat may accumulate around certain portions of the body, particularly the hips. When the back portion of the pituitary fails to function properly, excessive urination results—as much as 30 quarts a day. This rare malady is called **diabetes insipidus**, and should not be confused with “ordinary” diabetes.

THE MASTER GLAND

The most important function of the pituitary is the part it plays in stimulating, regulating, and coordinating the functions of the other endocrine glands. For this reason it is called the “master gland.” Research is constantly revealing new facts about the pituitary gland, and the relationship between the various glands of the endocrine family. Scientists are also delving into the secrets of the thymus gland and the pineal gland. When these problems are solved, we shall probably be able to cure or prevent many more diseases and also to gain deeper insights into the questions of health versus disease, and of normal aging versus senile degeneration.

CHAPTER 6

Care of the Individual Parts of the Body

- I. The Internal Parts and Organs, page 104 to page 130.
- II. The External Parts, page 130 to page 168.

OUR TOTAL HEALTH is the summation of the workings of individual parts of the body. If these parts, such as the heart, lungs, and liver, work at maximum efficiency, and are aided by a mind free from excess nervous tensions, then there is given us the basis for full enjoyment of the wonderful human body.

This chapter deals with most of the *individual parts* of the body. Some, such as the teeth and gums and the endocrine glands, have chapters to themselves, and I devote an entire part of this book to the mind. Here, I describe what the various organs of the body do, and what you should do to care for them, without, however, discussing every illness that can involve each part.

This section is also written to counteract such misinformation as “a chronic pain in the back means you have kidney trouble,” or “you should take pills to stimulate your liver,” and use “eye drops to relieve eye strain.” It will answer questions you have undoubtedly asked, from whether you should do something to protect your heart and lungs, to whether you could throw away your eyeglasses if you took eye exercises.

We can do things in our everyday living to protect the various parts of the body. To check more directly yourself on my proposition, read at least the next few sections on the brain, heart, lungs, and blood. (Many readers have surprised me by the statement that they have read this whole, long chapter at one time. One reader told me, “I never realized what fascinating parts and organs make up our bodies; I guess I was always squeamish when it came to learning about such organs as the heart, lungs, and liver.”)

BRAIN

The brain is the master organ of our bodies. With it we carry out functions possible only to human beings: complex thought, creative work in the arts and sciences, and the control of speech. This wonderful

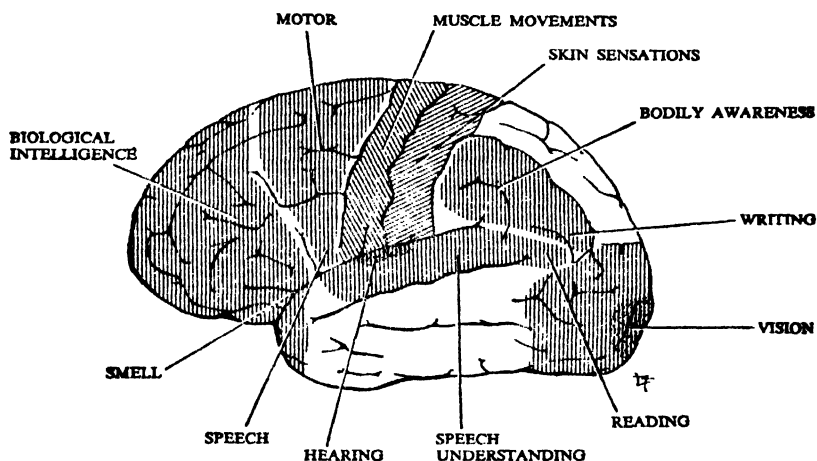


Illustration 6-1. THE BRAIN, VIEWED FROM THE LEFT SIDE, INDICATING THE AREAS INVOLVED IN VARIOUS FUNCTIONS.

organ contains 15 billion nerve units which permit the storage of millions of memory images, and all the other learning that we accumulate. In addition to the memory cells, the brain has huge numbers of connections which control the more than 600 muscles in our bodies. Other connections into the brain from the eye, ear, and the nerves in the skin permit us to record and remember what our eyes see, our ears hear, and our skins feel.

It is not surprising that nature had to evolve a system of defenses to guard this amazing three-pound structure against injuries. Thus the bony skull protects the brain. The scalp is a tough wrapping outside the skull that can take up blows. A tough membrane inside protects the brain. Also, the brain has an additional, wonderful protective device against blows and falls: it is encased in fluid and "floats" in liquid which helps absorb traumatic shocks. (See illustration which shows you how this layer of spinal and brain fluid bathes the brain.)

But nature can't provide infinite protection for the brain. And she apparently never anticipated the automobile and other modern devices that can deal terrific blows.

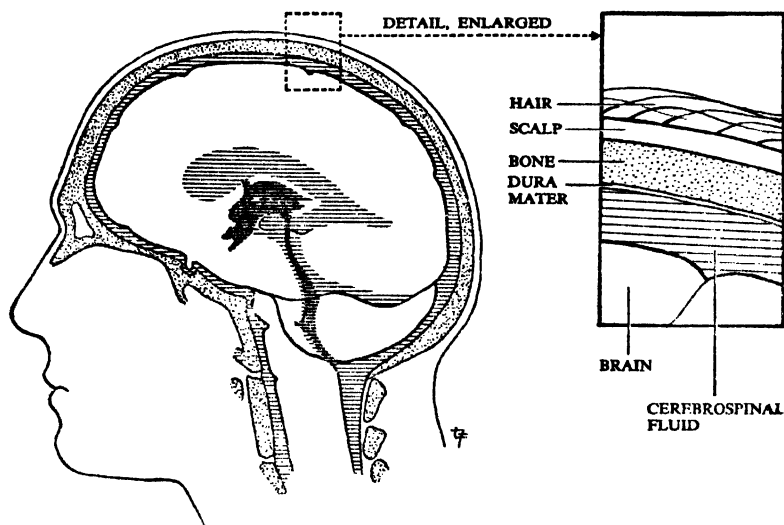


Illustration 6-2. HOW THE BRAIN IS PROTECTED.

Note the number of outer coverings which provide excellent protection for the brain, and the fluid which helps to absorb shocks.

We can help nature by protecting our brains against severe trauma. *Young people* should know the hazards of boxing, football, diving, and other sports, and act to avoid skull injuries. Employ recognized safeguards learned from your athletic coach. Using safety measures doesn't make you a "sissy"; it stamps you as a resourceful—rather than a reckless—human being. *Automobile drivers* should remember the terrible consequences of brain injuries when indulging in reckless speeding or other hazards. *Workers* must learn the physical as well as the chemical hazards on the job to prevent brain and nerve injuries (see fuller comments in the chapter on Your Job and Your Health, page 185). *Alcoholics* should realize that excessive drinking can injure the brain (page 693).

Suppose you are now alerted to protection of your brain against injuries from blows and accidents: what other protection can you give it in your daily life? You can let it operate at maximum efficiency by providing sleep (page 5) which rests and revitalizes the brain. And you can help the brain by not overstimulating or depressing it with too much caffeine from coffee, Coca-cola, and tea; or by too frequent use of sedatives such as barbiturates or bromides. And never go in for "pep pills" such as Benzedrine without consent of your doctor.

The brain works best when it is free from anxieties, fears, and other

mental conflicts. The part of this book entitled "You and Your Mind" gives detailed advice on how to keep your psyche (the functional part of your brain) in the best possible daily condition (see page 229).

Do you need special "brain foods" and tonics to keep your brain in good condition? *No*. The well-balanced diet described in the chapter on "The Food You Eat" will provide the brain with all the vitamins and nourishment it requires (page 25). Fish is not any better for the brain than other protein foods.

Can the effects of aging on the brain be prevented? Some of the harmful effects of hardening of the arteries can be prevented or diminished by following the suggestions given in the section on obesity (page 41), high blood pressure (page 606), and other conditions that weaken the arteries of the brain.

Remember, too, that the mind and emotions react quickly to diseases in other parts of the body. Headaches, dizziness, fainting, impaired memory, and other brain symptoms can be due to conditions in and around the brain, e.g., sinus trouble or a tumor; or these symptoms could be the result of poisons because damaged kidneys are not removing toxic materials from the blood. In other words, brain symptoms call for a complete medical checkup by your doctor.

And always be on the optimistic side about your brain and its future. I think of Michelangelo, producing some of the greatest art of all times when he was more than eighty; of Toscanini at eighty-seven, directing a hundred-piece symphony orchestra without referring to any musical score; and the many other people we meet in everyday life, who continue to have active, useful brains long beyond the traditional "three score and ten years." (See Chapter 37, *The Later Years*, page 788.)

HEART

The heart is a muscular, pear-shaped organ, slightly bigger than your fist, composed of four chambers with valves in them. Enclosed by a protecting sac (the *pericardium*), it is located in the left front portion of the chest. It is a pump, sending blood to all parts of the body through the *arteries* which divide and subdivide, eventually merging with tiny vessels called *capillaries* which, in turn, merge with *veins* that carry the blood back to the heart.

Your heart beats automatically at the rate of about 70 to 80 times a minute—or about 40,000,000 times a year, every year of your life. Its pace increases when the body is active, decreases when it is at rest. Most people cannot consciously influence its speed. However, if your heart beats at a slower rate, that doesn't mean there is anything wrong

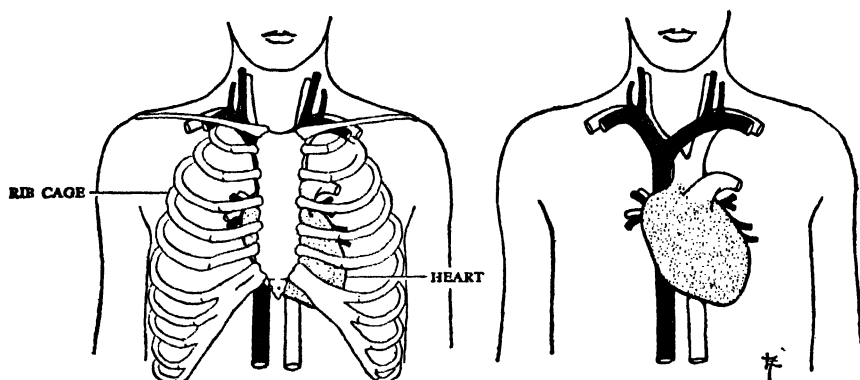


Illustration 6-3. LOCATION OF THE HEART.

LEFT: the protective bony structure. **RIGHT:** the blood vessels from the body (in black) and to the body (in white).

with it. It may also beat somewhat faster than 80 times a minute and still be perfectly normal.

Since the heart is so essential an organ, it is fortunate that it is a tough one. Although you may have heard that it is “delicate,” the heart has been handled by surgeons who have successfully sewn up wounds in it, and have even repaired the valves and corrected malformations. Protected by the tough and resilient ribs, the heart is rarely damaged by a blow.

Guarding the everyday health of your heart does not mean that you should spend most of your time in bed! Quite the contrary. Like any healthy muscle, a healthy heart is not injured by exercise. However, there are definite limits to the amount of strain that should be placed on a middle-aged, old, or damaged heart. If you are over forty, a snow-shovel or a new sport (especially high-altitude hiking) can precipitate a heart strain. If you are overweight, your heart has to work much harder than it would if your weight were normal. Fear can injure your heart, and a great many people are more afraid of heart trouble than they are of anything else.

Guard your heart by avoiding obesity and, if you are middle-aged, by being sensible about exercise. In addition, follow this piece of advice: take your heart seriously but don't worry about it. This may sound contradictory, but it isn't. It simply means that you should have your heart gone over at intervals at your regular medical checkup, and if the doctor says it's all right, get your mind off your heart! (See Checkups, page 541.)

Only a doctor can tell whether or not there is anything the matter

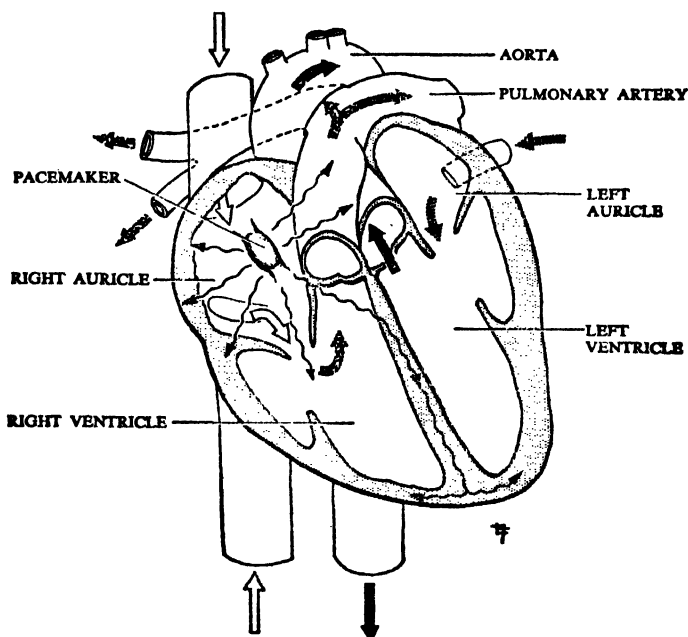


Illustration 6-4. COURSE OF BLOOD THROUGH THE HEART.

The blood flows from the body (white arrows) into the right side of the heart; from there (stippled arrows) it goes to the lungs; it returns (striped arrows) to the left side of the heart, and is sent through the body (black arrows).

with your heart; in some cases a specialist (a *cardiologist*) is needed to make the decision. *Palpitation* (pounding) of the heart may be most unpleasant and even alarming—but it is more apt to be caused by nervousness than by a serious organic condition. When your heart seems suddenly to “flop over” in your chest, you may be alarmed—needlessly, for it is often due to nothing more than the fact that you have been smoking too many cigarettes or drinking too much coffee.

Between your checkups you can help yourself and your doctor keep your heart in good condition by some everyday precautions and activities. Avoid really excessive smoking, especially if there is a tendency to heart attacks in your family. A good diet, with regular spacing of meals, helps the heart work at its best. Keep your work and social life under control so that you are not chronically fatigued. Avoid reducing pills, which may contain thyroid medication, a powerful heart stimulant. Do not take digitalis or any other “heart medicine” without supervision by a doctor.

If you are so tense and driven in our competitive world that you suffer from tendencies toward high blood pressure or heart pains (angina pectoris), ask your doctor about the advisability of a talk with a psychotherapist. You may be able to reduce the nervous tension to the point where you may avoid trouble with your heart in later life.

The great enemies of your heart are the following diseases. Read the detailed accounts of them in this book so that you will be alerted to their dangers, and know what medical science has learned about their prevention or mitigation: high blood pressure (hypertension), page 606; rheumatic fever, page 416 (not rheumatism or arthritis, which do not affect the heart); hardening of the arteries (coronary artery disease), page 604; diabetes, page 87; nephritis (Bright's disease), page 610; syphilis, page 602.

LUNGS

The two lungs, which like the heart are completely encased by the ribs of the *thorax* (chest cavity), lie on each side of the heart. They supply the body with oxygen. The blood picks up, from the lung capillaries, the oxygen which the tissues must have, and carries it in its red cells throughout the body. Carbon dioxide, which the tissues give off as a waste product, is carried back to the lungs and expelled.

The air goes to the lungs via the *trachea* (windpipe) which divides into smaller tubes called the *bronchi*. The lungs are subdivided into lobes. Hence, *bronchopneumonia* means infection of the bronchial tubes, whereas *lobar pneumonia* refers to infection of one of the large portions of the lungs. Asthma is properly called *bronchial asthma* because it affects the air tubes.

The lungs act like bellows, sucking in air through the trachea when the chest cavity gets bigger, and expelling it when the cavity contracts. The *diaphragm* and other muscles expand the chest during respiration. This process goes on at the rate of about sixteen times a minute, increasing in speed when more oxygen is needed, as when the body is active. It is an automatic process, although we can deliberately take in a breath and keep from expelling it for a while. It is possible to work the "bellows" by artificial respiration or by means of an iron lung, if they cannot function by themselves.

What everyday care should you give your lungs? First, you must reach a decision about that troublesome problem of smoking, if you are devoted to the use of tobacco. There appears to be some relationship between cancer of the lung and the prolonged excessive use of cigarettes (especially when deeply inhaled). I have discussed this problem, which

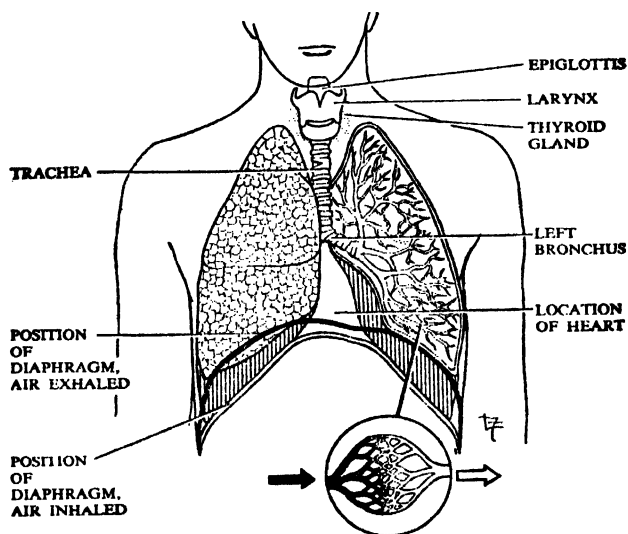


Illustration 6-5. THE LUNGS.

LEFT: Outer surface of the lung. RIGHT: Internal structure of the lung. INSERT: Network of blood vessels in a microscopic section of the lung, showing (in black) the blood before picking up oxygen, and (in white) the blood containing oxygen.

I believe is given too much scare publicity, in my sections on smoking (page 16), on cancer (page 626) and also in the chapter on The Calculated Risk in Health.

Next, if you are a worker in any industry where dusts, gases, and smoke are inhaled, you must learn the risks involved *now* because industrial materials such as silica will have produced their irreversible damage to the lungs by the time symptoms appear. Read the section on Your Job and Your Health if you work in an industrial job (page 191).

You can do a great deal to protect your lungs against infections from pneumonia and tuberculosis if you acquaint yourself with the information given elsewhere about these diseases (see Index). I have also discussed the question of climate and lung disease in my chapter on Climate and Illness, page 222.

And with such wonderful advances in the treatment of diseases such as pneumonia, tuberculosis, and even cancer of the lungs, you can "breathe easily" as you enjoy the wonderful pair of lungs nature has furnished—provided you equip yourself with adequate knowledge about these diseases, so that if they did occur you would recognize them in the early, *curable* stages.

BLOOD

Blood is the "elixir of life." Nourishment (including oxygen) is carried in the blood by the *red cells* to the organs and tissues; waste materials go from the tissues into the blood. It carries essential products made by various organs (for example, the liver) to other organs which need these products. It helps keep the temperature equal throughout the body. Its *white cells* devour germs. Other parts of the blood, including its fluid portion (*plasma*), carry other germ-killing materials. It also contains substances, including the *platelets*, that make the blood coagulate—that is, turn solid so that serious bleeding won't result from a cut or wound.

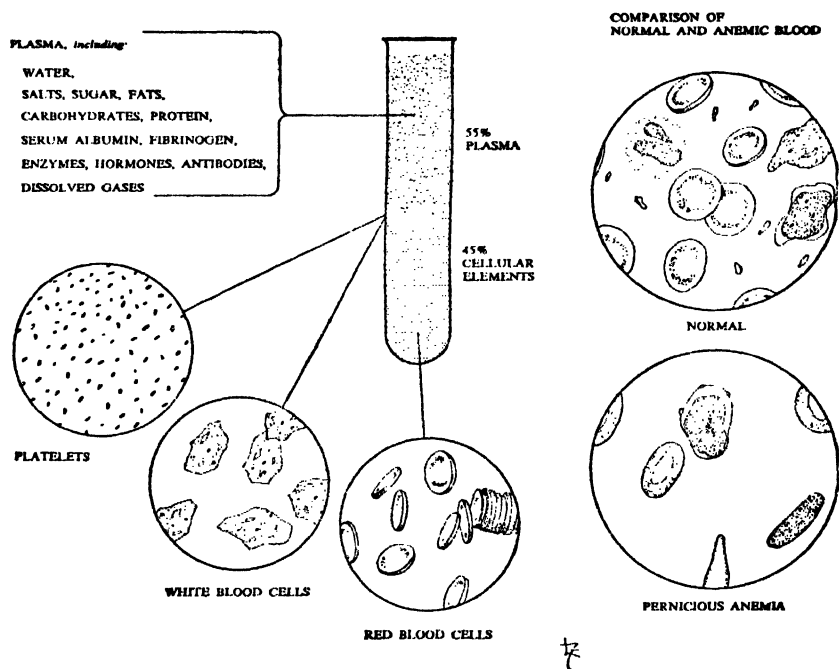


Illustration 6-6. COMPOSITION OF THE BLOOD.

Right here I want to mention one thing sometimes attributed to the blood that it does *not* do. It has no connection with the good or evil in human nature; people don't become criminals because there is "bad blood in the family." Similarly, it has no connection with so-called racial characteristics; our skin is not brown or yellow or white because of anything in the blood. The blood *types*, which are important where

transfusions of whole blood (but *not* of plasma) are concerned, have to do with the dangerous tendency of blood cells to *agglutinate* (clump) under certain circumstances. But these blood types are not arranged according to race. The blood of a Negro or a Chinese may match that of a Scandinavian, for instance, while that of his brother might not match it and could, if it were transfused into him, cause serious trouble.

In addition to the four blood types, there is another factor, the *Rh* (*rhesus*) *factor*, which can cause incompatibility in case of a transfusion. Only about 15% of all people do not have this factor in their blood; they are called Rh negatives and should have transfusions of whole blood only from others like themselves. The baby of an Rh negative mother and an Rh positive father may (in about 5% of such cases) suffer from a blood disorder which was often fatal in the past but is now counteracted by transfusions of blood from an Rh negative person. I discuss this fully when I deal with pregnancy (page 333).

Your blood does not need to be "purified," so don't waste money on tonics that could not possibly purify it anyway. It doesn't get thicker in cold weather and thinner in hot weather, so avoid medicines that promise to remedy anything of the sort. It will take your doctor only a minute to examine a drop of your blood and find out whether or not it contains sufficient red blood cells, so don't waste money on "iron pills" or tonics which you may not need, and which may upset your digestion. The kidneys remove most of the toxic materials in the blood and thus purify it. The lungs breathe out the carbon dioxide that accumulates in it. Nature regulates so perfectly the acid and alkaline states of the blood and tissues that you don't need to do anything about that, either. *Acidosis* or *acid blood* does not arise from eating citrus fruits or anything else, contrary to some ideas. It results only in serious illnesses such as untreated diabetes (page 91).

All that a healthy person needs to do for the blood is to maintain an adequate diet, avoid poisonous substances, and keep germs out of the blood stream by preventing infections.

Disorders of the blood can affect the white cells, the red cells, or the ability of the blood to clot. *Leukemia* is a kind of cancer in which the number of white cells is tremendously increased (page 623). In *pernicious anemia* (page 705), which is entirely different from ordinary anemia (page 704), the number of red cells is seriously diminished. Certain medicines can be given that eliminate the danger from this disease, which was once usually fatal. In ordinary *anemia*, the low number of red cells is usually due to a loss by bleeding or to an incorrect diet. This anemia, too, can be corrected, but don't take "blood tonics" because only a doctor can determine the cause of anemia and eliminate it, in addition to giving you the proper medicine.

Hemophilia (page 317) is a rare hereditary disease in which the blood fails to clot, so that its victims may bleed to death from a slight injury. It is found only in men, who inherit it from their mothers; thus it always skips a generation. **Purpura hemorrhagica**, in which bleeding takes place inside the body, is caused by a shortage of blood platelets. Although all of its causes are not known, it can result from the action of a poison such as benzol (page 195). The cause of **polycythemia**, which means an abnormally large number of red blood cells, is usually not known. *Blood poisoning* is due to getting germs into the blood stream (also called *septicemia*).

BONES

The bones form the basic framework or chassis of the human body. There are 206 bones in the body. Some of these, such as the skull, which encloses the brain, the eyes, the inner ear, have chiefly a protective function. Others are mainly supporting structures, such as the vertebral column with its 24 individual bones. This encases the vital spinal cord, and also helps support the back. Other bones are concerned chiefly with movements, e.g., those of the fingers. The various types of bones are shown in Illustration 6-7 on page 115.

Bones contain a hard, stony chemical structure which gives them the tremendous strength required of them. Yet they are so marvelously constructed that they are resilient and light enough to permit the wonderful feats of strength and agility of which the human being is capable. The basic chemical of bones is calcium phosphate, found so plentifully in milk. That is why milk is such a basic item in the diet of growing infants and children (page 32), and is also very important for the pregnant and nursing mother (page 338). Vitamins, especially vitamin D, are required in the proper manufacture of the bones, as described more fully in the section on the vitamins, page 34, and on page 383, in which I discuss the feeding of infants.

As people grow older their bones become more brittle, and heal less readily. That is why physicians fear certain fractures in elderly people much more than in children and younger adults.

The bones have another quite different function in addition to those of protection, support, and movement. They are vital elements in the manufacture of the blood cells. The bone marrow carries on this important work. After the red and white blood cells, etc., are manufactured in the marrow of the various bones, these cells enter the blood to carry on the functions just described in the section on the blood.

The bone marrow requires nutrient foods and vitamins different from those needed by the hard outer calcified part of the bones. The red

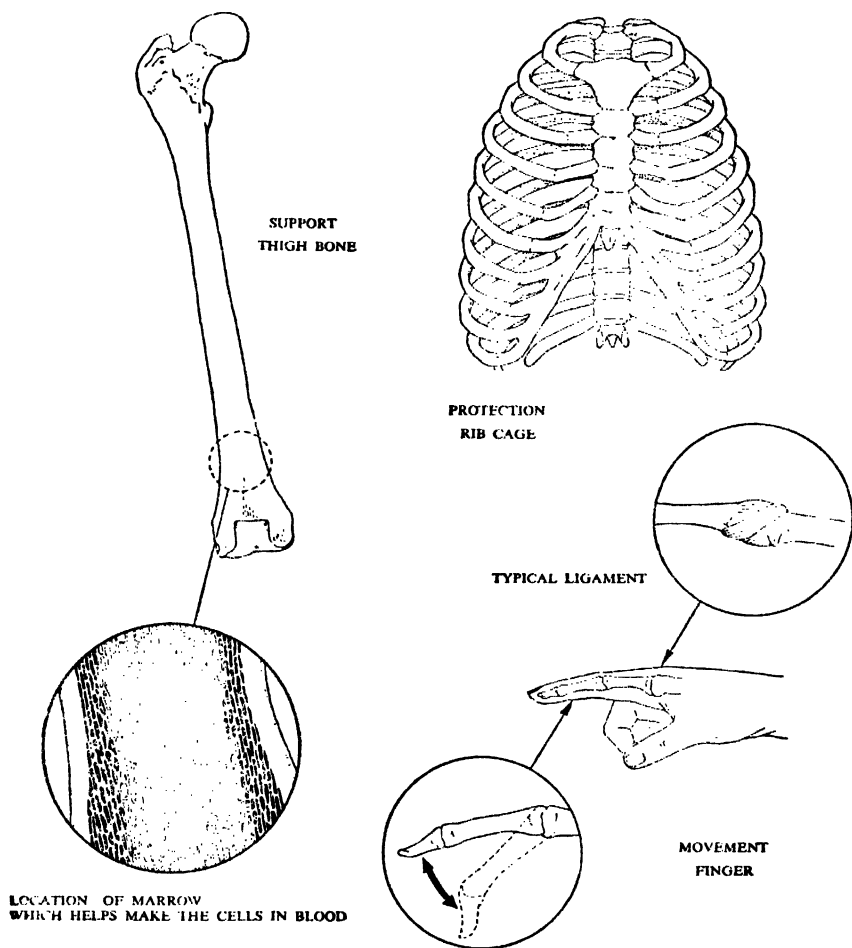


Illustration 6-7. MAIN TYPES OF BONES.

blood cells must have iron and proteins to build hemoglobin, their important oxygen-carrying pigment. Other vitamins in the vitamin B family of these substances are required to nourish the bone marrow.

What everyday care do I recommend for the bones? If you follow the good diets prescribed in this book (page 25), and utilize the precautions against accidents described in Chapter 22, page 456, you will give your bones the care they need.

There are a number of diseases of the bone and the bone marrow which are described on pages 671 and 707.

JOINTS, LIGAMENTS, AND BURSAS

Joints and ligaments connect the bones to each other. The joints provide the smooth, gliding surfaces at the ends of the bones so that movements can be carried out easily and painlessly. As shown in Illustration 23-6, page 482, the joint consists of a fibrous sheath that is attached to the smooth end of the bones. Nature provides for the ends of the bones concerned in our bodily movements a special material, called *cartilage*. This material has special resiliency and smoothness so that fingers, arms, and legs can move thousands of times daily without our being actually conscious of their activities.

To bind bones together, or to strengthen joints, nature uses a special type of tough "binding cord" called *tendons*. These are attached to the bones so well that only exceptional strains will tear a ligament away from the bone.

A final element in the wonderful, smooth, and effective movement of our joints is the *bursa*. The bursa is a sac or bag with smooth surfaces, containing a small amount of lubricating material. The bursa permits the smoother functioning of the joints. The location of a typical bursa is shown in Illustration 34-3, page 675.

The everyday care of the joints, ligaments, and bursas is extremely important to you. An injured joint, a torn ligament, or an inflamed bursa can interfere seriously with your enjoyment of life—or incapacitate you from work. It is of primary importance that you work with—not against—nature so that there will be no extra stresses on joints, ligaments, and bursas. That means keeping a normal weight; if you are greatly overweight you are overloading the joints of the knees and feet every time you stand or walk. Good posture also keeps the joints in their best condition because weight is distributed as nature intended. Good physical condition prevents the joints from being strained by lifting and strenuous sports.

I suggest that you read the previous chapter on the General Care of the Body, especially those sections dealing with posture and exercises (pages 8-12). Also, if you are overweight, consult Chapter 3. Everyone, whether a man lifting heavy objects at work, or a housewife moving the furniture at home, should know the proper techniques for lifting, as explained in the illustration on page 783. Older people are subject to the wear-and-tear type of arthritis described on page 669; they should have their joints checked at their regular medical checkups (See Chapter 27). Also, workers in the many occupations that require constant use of certain joints are subject to joint and bursa trouble. "Housemaid's knee" is a form of chronic bursitis; typists and pianists may develop aches in the finger joints, or the wrist, elbow, or

shoulder; coal miners are subject to backstrains as are farmers and workers in many other jobs requiring hard physical labor. (See my chapter on You and Your Job, page 185, for precautions at work.)

There are many injuries and diseases which can affect the joints, ligaments, and bursas. I have devoted a whole section of the book to these afflictions, e.g., rheumatism and arthritis, page 668; bursitis, page 675; sprains, page 482; backache, page 671.

MUSCLES

There are over 600 muscles of voluntary movement in the human body. These give us the power to carry out the enormous variety of movements we are capable of. I described the bones, joints, ligaments, and bursas first so that you would understand the basic bony framework or skeleton of the body, and how the bones are connected for motion at the joints. But there could be no action unless there were muscles capable of moving the bones. The muscles of movement are called voluntary, skeletal, striped, or striated muscles. These synonyms refer to muscles such as the biceps which is the powerful one in the front of your upper arm, which lifts the forearm. You can feel the powerful tendon in the elbow where the biceps muscle is attached to the bone.

These voluntary muscles are quick-acting, and are under control of the conscious part of our brains. There is another group of muscles in the body which carries on activities over which we have little or no control. These muscles propel the food along the intestines; they contract the heart; they control the pupil of the eye. Therefore, they are called *involuntary muscles*.

The voluntary muscles are the only ones that require your everyday care. Muscles remain in good condition only when they are exercised properly. Healthy muscles are important to a sense of well-being, and to good posture, graceful walking, and other movements. Also, strong muscles protect the bones, joints, and contents of the abdomen against injury. Read my section on keeping muscles in good condition by pleasurable forms of exercise and sports, pages 7, 8 and 11, if you are not in ideal "muscular" condition. Almost every older person, or many others who do light work, needs to strengthen the abdominal and back muscles by the exercises described in the illustrations on pages 11 and 12.

Muscles are composed chiefly of protein. A good diet containing the sources of protein, which I describe on page 32, will help you build good muscles.

Almost everyone has experienced a "charley horse." This results from too violent use of a muscle or group of muscles, e.g., at the start

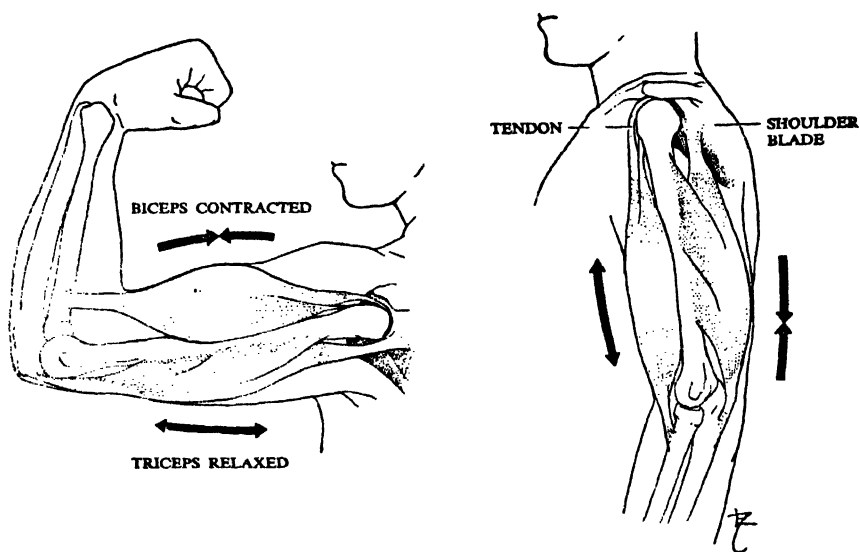


Illustration 6-8. VOLUNTARY MUSCULAR ACTION.

of a new job, or shoveling the first snow, or, very frequently, during vacation when there is a natural tendency to go "all out" for strenuous sports. The muscles "protest" against the too violent use by soreness, stiffness, and pain. The "charley horse" will clear up with rest of the sore muscles. Warm baths will help. A tablet or two of aspirin by mouth will also be useful in relieving the painful feeling. *Muscle twitchings* result from various causes, usually minor ones like temporary fatigue, overwork of a group of muscles, or nervousness or insomnia. If muscle twitches become frequent or painful, or if they involve the face, producing unpleasant grimaces, then you should discuss them without delay with your doctor. The same is true of *muscle cramps*, especially the ones that occur at night which sometimes wake people from their sleep because of intense pain in the calf of the leg or in other muscles.

Muscles are affected by a great variety of diseases. There are the intrinsic ailments of the muscles such as *muscular dystrophy*, described in the section on muscle diseases, page 697. Muscles waste away if the nerves that connect them to the brain are damaged. This happens in polio and other afflictions of the nerves and spinal cord (see pages 680-682). Also, if a stroke damages a section of the brain which controls an arm or leg, then the muscles of the limb may atrophy, as explained on page 618. Similarly, in severe disease of the joints or bones, there may be inability to move a limb which then causes "secondary" wasting of the muscles.

STOMACH, INTESTINES, AND COLON

The *stomach*, which is located in the abdominal cavity, resembles a bag approximately a foot long and six inches wide. The narrow small intestines are about twenty feet long, and the *colon*, or large intestine, is about five feet long. A tube called the *esophagus* connects the throat to the stomach. The place where the stomach ends and the small intestine begins is called the *duodenum*. It is very important because the main tubes from the *pancreas*, the *liver*, and the *gallbladder* discharge juices and bile into it. Ulcers are frequently located on the duodenum.

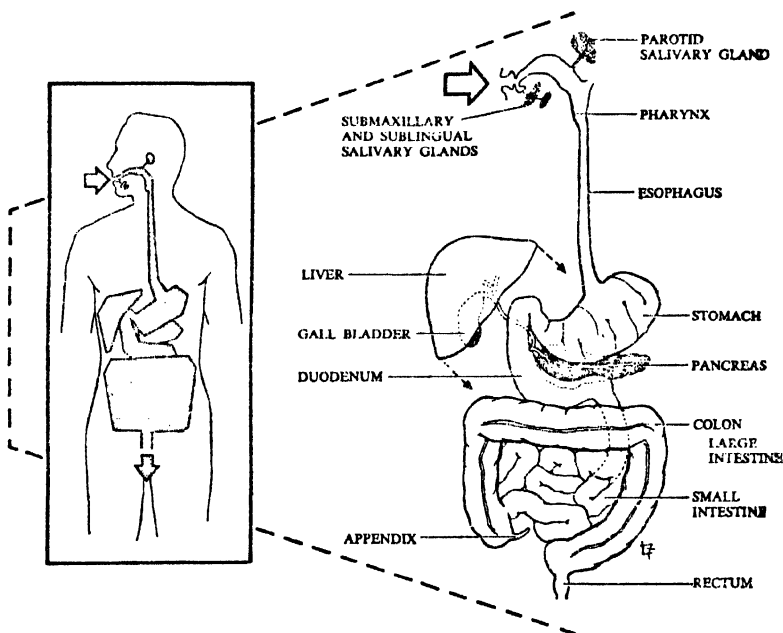


Illustration 6-9. THE GASTROINTESTINAL (DIGESTIVE) TRACT.

LEFT: Shaded areas indicate the location of the organs associated with digestion. **RIGHT:** As food passes through the mouth, stomach, and small and large intestines, it is worked upon by juices manufactured in these and other organs (such as the liver and pancreas). The food is then absorbed, mainly through the intestinal walls. The residue is excreted through the rectum.

Food is churned up, acted upon by juices, and digested in the stomach and intestines, the residue being eliminated through the opening known as the *rectum* and *anus*. Actually, the mouth itself, in which the food is chewed and mixed with saliva, is a part of the *digestive system* or *gastrointestinal system* as it is also called.

The delicate and sensitive lining of the stomach and intestines is actually a busy chemical factory, making juices and enzymes for the digestion and absorption of food. The stomach and intestines, which are controlled by a network of nerves, are constantly in motion, pushing the food along. It takes about twenty-four hours for the food you eat to move through the digestive tract.

Disorders of the gastrointestinal system are among the most common illnesses we doctors encounter. Almost everyone has had some degree of difficulty at one time or another.

These disorders can be functional. Because of the extensive nerve connections involved in the digestive system, fear, anger, and other nervous upsets may set off attacks of nausea, cramps, diarrhea, and other symptoms. Organic diseases such as ulcer and cancer can affect these organs, as do contagious ones such as typhoid fever and virus infections, as well as food poisoning, constipation, dyspepsia, allergies—and a list almost as long as the digestive tract itself!

You can protect your digestive system by taking precautions against infectious diseases (page 169); by being sensible about the food you eat and the way you eat it; by avoiding poisonous and irritating substances (including excessive amounts of alcohol); and by maintaining mental health in order to prevent “nervous stomach” and other psychosomatic digestive diseases.

Perhaps even more important, you can guard the health of your stomach and intestines by *leaving them alone*. Don't take enemas to “clean out the colon and get rid of germs.” Nature intended them to be there, and a great many people would have better digestions if they had never heard the term *autointoxication*. I wish you would remove it from your vocabulary, and also the words *acid stomach*, *alkaline stomach*, and *heartburn*. You can't “cure” these nonexistent diseases by taking stomach “sweeteners,” or “aids” to digestion, which can do real harm.

It is unfortunate that there are so many “simple remedies” for indigestion on the market, when this is by no means a simple disease. In fact, it isn't a disease at all, but a condition or group of symptoms which can be caused by any number of diseases, from *migraine headaches* (page 730) to heart disease (page 599), *gallbladder trouble* (page 645), the fact that you are coming down with the flu—or simply to the fact that you bolted your dinner when you were tense and tired!

Even a skilled physician often finds it a long and difficult task to determine the cause—and hence the treatment—of indigestion. Don't object if your doctor asks you to have a complete set of x-rays, after having you drink some *barium*, so that he can find out whether it is caused by a tumor or an ulcer; or if he wants to examine your stomach with a prism-equipped instrument called a *gastroscope*. These tests are

well worth while. Almost every disturbance of the gastrointestinal system which makes itself known by the symptoms of indigestion can be helped *if* it is identified in time.

On the other hand, a disease can progress to a serious, even fatal, stage while you are engaged in "treating" your indigestion—for example, if you took a cathartic for indigestion and it happened to be caused by *appendicitis* (page 654). Let the doctor decide whether or not you should take any medicine.

I know that everybody isn't going to the doctor each time he has a **mildly upset stomach**. If I am sure that's all the patient is suffering from, I recommend one of the following remedies:

A level teaspoonful of bicarbonate of soda in something, such as fruit juice, that appeals to the individual.

Ten to 20 drops of essence of peppermint taken on a lump of sugar, or in a teaspoonful of sugar, and chewed slowly.

A teaspoonful or two of *creme de menthe*, or other liqueur or brandy, sipped slowly; or a little wine such as sherry.

For **nausea** or **cramping**, *tincture of belladonna* is helpful. Adults require from 10 to 20 drops in water. Each person must find his proper dosage. Usually, an effective amount will cause some dryness of the mouth or a slight blurring of vision. The dosage can be repeated in 4 to 6 hours.

For more **intense abdominal cramps**, one to two teaspoonfuls of *paregoric* will be helpful (see page 654 re *appendicitis*).

A persistent "**nervous stomach**" can be helped by mild sedatives such as phenobarbital, especially if given in combination with tincture of belladonna. However, this medication should be prescribed only by a physician.

Aspirin, taken for a headache, cold, or rheumatism, sometimes causes stomach distress. This can be alleviated by a teaspoonful of bicarbonate of soda, or by using a *buffered aspirin*, such as *Bufferin*.

If you are *occasionally* (not habitually) constipated, it is safe for you to take mild **laxatives** such as a tablespoonful or two of *milk of magnesia*, as I suggest in the section on **constipation** (page 746). Avoid dosing yourself regularly with any laxative or cathartic.

Be sure to consult a doctor if you suffer persistently or repeatedly from any of the following symptoms: nausea, vomiting, excessive belching, fullness or burning sensations in the abdomen, cramps, constipation, or diarrhea. Be sure to see him *immediately* if you pass stools that are bloodstreaked, blackish, colorless, or very foul smelling.

THE APPENDIX

At the juncture of the small intestine and the large intestine is a little wormlike appendage called the *vermiform appendix*. (See Illustration 33-6, on page 655.) No one knows why nature placed it there. Unfortunately, this apparently useless structure can be the source of serious or even fatal illness. No age group is immune to it. It may surprise you to learn that it is a more serious threat to children than it is to adults. Be sure to read the section in which I tell you the details about appendicitis (page 654); and always remember this fact: the one thing you can do for your appendix is to realize that, if it is inflamed by appendicitis, you may cause it to rupture by taking a cathartic or by applying a hot-water bottle over it.

Can appendicitis be prevented? Unfortunately, there is no way known at present to medical science to prevent this potentially serious illness. However, its prompt diagnosis can lead to effective removal of the inflamed organ before serious complications set in. The operation when performed early by a competent surgeon is a comparatively simple and safe one.

LIVER

If you place your left hand over the lowermost ribs on the right side of your chest, it will cover the liver, which is one of the largest organs in the body (see Illustration 6-9, page 119). It has many functions which are concerned with the processes of digestion, nutrition, and with the development of the red blood cells. It produces *bile* which flows out through a channel into the small intestine. It helps detoxify harmful substances in the blood.

The liver in a healthy body requires no particular care or concern. It certainly does *not* need to be "stimulated" by medicines such as those which claim to "increase the flow of bile."

However, there are a few things you can do to prevent damage to your liver. Protect it from the harm which can result from excessive drinking of alcoholic beverages, and from poisons such as *carbon tetrachloride* to which you may be exposed at work (page 195) or during some hobbies that require solvents. Obesity also damages the liver. A good, balanced diet (page 25) and normal weight (page 43) are things you should provide for your liver.

Damage to the liver, such as that caused by a virus infection, can manifest itself by the appearance of *jaundice* (page 645). This causes a yellowing of the skin and, particularly, of the whites of the eyes. If you

notice such a condition, report it immediately to your doctor. Some viruses that cause liver infection can be transmitted by blood on needles or syringes that have been used previously. Do not use one—for example, in giving insulin—that has been employed by another person. Alcohol and ordinary boiling do not kill the virus; the high temperature of an autoclave type of sterilizer is required. We doctors are now using individually sterilized needles to draw off even a drop of blood, because of the danger of transmitting the liver virus.

GALLBLADDER

The gallbladder is a “side pocket” in the channel through which the bile flows from the liver into the intestine; it acts as a storage place for the bile (see Illustration 33-5, page 649). Infection may cause an acute or chronic inflammation of the gallbladder (page 648). Gallstones (page 648) sometimes cause a great deal of pain, or they may block the flow of bile, causing jaundice and an infection in the liver and gallbladder. Fortunately, the gallbladder can be surgically removed; the body can get along without it.

There is nothing you need to do about the everyday care of your gallbladder except to keep your weight normal. Obesity probably increases the tendency toward gallbladder disease. Once stones have formed, they cannot be dissolved; sometimes they pass spontaneously into the intestines (page 648). However, your doctor has ways of stimulating the flow of bile, and of decreasing the infection in the gallbladder: these measures may conceivably reduce the formation of additional stones.

KIDNEYS

The kidneys are two organs located deep in the abdomen at about the level of the lowest (“floating”) ribs. By means of more than two million tiny, separate filters, they filter out, and remove from the blood, the urea and other useless material it contains. This they excrete in the urine. The kidneys “know” how to hold back the valuable vitamins and minerals that the body needs. They also regulate the volume of fluid in the body: when a person drinks a large amount of fluid, the kidneys excrete the excess, but in hot weather, when extra fluid is lost via the sweat, the kidneys excrete smaller amounts of urine.

Your kidneys do *not* need to be “flushed” or “stimulated” or any of the things that patented medicines falsely claim to do. Trouble in the kidneys can cause pain in the lower back, and this symptom, together

with changes in the urine, should always be reported immediately to a doctor. However, contrary to the claims made for certain "kidney medicines," they can't cure *chronic pain in the back*, which is *seldom* caused by kidney trouble. Don't take *any* medicines for your kidneys except on a doctor's orders.

Some of the causes of kidney stones (renal calculi) are beyond our control, but preventing or curing infections will help to keep them from forming (page 21). Another thing you can do to prevent the formation of stones is to see to it that you always have *an adequate flow of urine*. This should amount to at least a quart or slightly more a day. When the urine becomes highly concentrated during hot weather or as a result of excessive sweating at work, there is an increased tendency toward the formation of stones and the occurrence of infections. This can be avoided by drinking sufficient water if you are perspiring a great deal.

A floating (or movable) kidney is usually not serious, although it may cause discomfort. *Bright's disease* (also called *nephritis*) is a *potentially serious illness* (page 610). Whenever the urine appears bloody, wine-colored, smoky, or at all unusual, it may be a sign of Bright's disease, which as a rule does not cause any pain. Always see your doctor *immediately* if you notice any of the above conditions in your urine. You should also see him immediately, or go to a hospital, if your urine looks cloudy or full of pus. Inflammation of the kidneys is called *pyelitis* (page 610). If treated early, this one, and many kidney disorders, can be completely cured. However, if not cured, infections of the kidneys can slowly destroy these vital organs, leading years later to *uremic poisoning* (page 614) and high blood pressure (page 606).

URINARY BLADDER

The urinary bladder and the tubes leading to and from it form, together with the kidneys, the *urinary system*. The tubes called the *ureters* carry waste products, including urea, from the kidneys to the bladder. After a sufficient quantity has collected there, it is eliminated by urination, through the tube called the *urethra*. The external opening of the urethra is called the *meatus*. (See Illustration 6-10, page 126.) No everyday care is required for the bladder.

Infections and inflammations are fairly common, especially in the bladder (*cystitis* is the name for infections of the bladder) (page 341). They usually yield to treatment with antibiotic medicines, but these *must* be given

under the supervision of a doctor. Never use a "bladder purifier" or other home remedy. Infections can be the cause of *incontinence*—the inability to control urination. This is natural in young children; in older ones it may take the form of *bedwetting*, and is frequently due to emotional tension, although it can have a physical cause. Frequency of urination can be a symptom of a disease such as *diabetes* (page 87). Difficult urination can be caused by a *urethral stricture*. Always consult a doctor if you experience *frequent, difficult, or painful urination*. Don't attempt to treat these conditions yourself. They are often due to an easily cured inflammation, but they can be caused by a disease; for example, in men by an enlargement of the *prostate gland* (page 709). *Stones* can also form in the urinary bladder. Never take any "home remedies" to "dissolve" them. If necessary, stones can be removed by a surgeon.

S P L E E N

This pulpy organ is tucked away under the ribs in the upper left-hand corner of the abdomen. It performs important functions associated with the blood, particularly the red blood cells. It rarely causes any trouble, and there is nothing you need do about it. The internal abdominal bleeding you may have heard mentioned in connection with some accident might very well have come from a broken or ruptured spleen. Fortunately, the body can get along without the spleen, so it can be removed by an operation if injury or disease should require it.

P A N C R E A S

The pancreas lies high up in the abdomen, situated deep behind the stomach. In animals, the pancreas is called the sweetbread. It produces important digestive juices which flow into the small intestine. Equally important are the islets of Langerhans which are contained in the pancreas and which produce insulin. A lack of insulin causes *diabetes* (page 87). The best thing you can do for your pancreas is to avoid overweight (page 44), which predisposes people to diabetes.

G E N I T A L S (M A L E)

Look at the diagram showing the structure of the male genital system.

Before a male baby is born, his *testes* lie within the abdominal cavity; at the time he is born, they descend through the *inguinal canal* into the

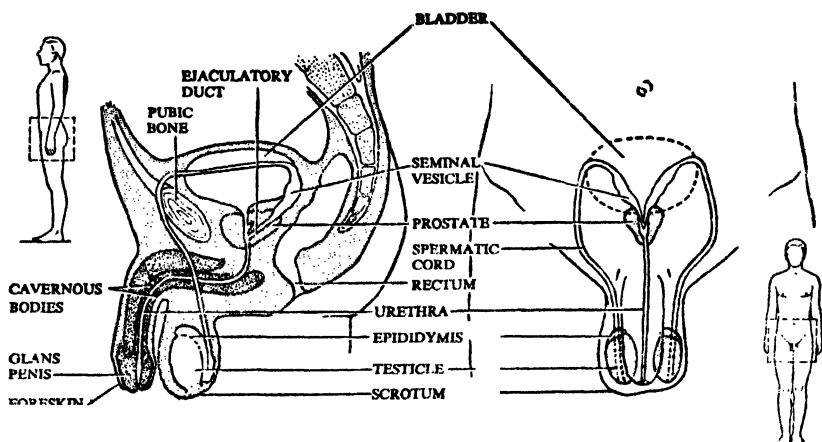


Illustration 6-10. THE MALE GENITALIA.

The bladder is shown by dotted lines, in order not to obscure the organs in back of it.

scrotum. (Testes that do not descend can usually be surgically placed in their proper spot.) It is because of this passageway that *rupture* (hernia, page 712) occurs so much more frequently in men than in women. Always consult your doctor if you notice a bulge in the groin toward the upper part of the scrotum or in the lowest part of the abdomen just above the tight cord that separates it from the thigh. Don't listen to people who tell you to wear a truss. Only a doctor is capable of deciding between the relative merit of an operation and a truss in case of a hernia (see discussion of hernia, page 711).

Is circumcision necessary? This operation is the removal of the fold of skin called the *foreskin* or *prepuce*. It is performed if this fold covers the entire end of the penis (the *glans*) and obstructs the passage of urine, or is so tight that irritation results. Otherwise, circumcision is a personal matter. It has been customary among certain groups for centuries; the Egyptians practiced it before the Hebrews made it a part of their religious customs. The practice is safe and simple when performed in accordance with the principles of modern aseptic surgery. Although circumcision can be performed later in life, it is best to circumcise a boy when he is seven or eight days old and will experience no physical or emotional discomfort from it (see also page 367). Talk the matter over with your family doctor or pediatrician.

Cleansing the genitals. They should be kept clean and free from

infection. Uncircumcised males should pull back the foreskin and wash off any secretions with soap and water as frequently as required to keep the penis clean. The genitals should be protected from blows and other injuries during football and other strenuous sports. No special food is necessary for their development or health. No medicines are required; they should never be taken except under a doctor's orders. The harm done by **masturbation** is not physical (page 447). However, because of the feelings of guilt often associated with this practice, conflicts, tensions, and other emotional problems frequently arise, manifesting themselves in phobias about syphilis or in *impotence* (page 297).

The **penis** can be affected by five *venereal diseases* (referred to as V.D.). *Syphilis* (page 650) is the most serious of these. I can't remind you too often that this disease can be cured completely; I urge you to read the section on this disease so that you won't fail to seek medical advice if you have any reason to suspect that you have contracted syphilis. No one except a competent physician is capable of treating this disease. You would be running the gravest risk if you depended on a quack or an advertising doctor to treat or even to diagnose your condition.

The other common venereal disease is *gonorrhea* (page 715). Before the development of the miracle drugs such as sulfa and penicillin, it was a very serious illness. Now it can usually be cured with one injection of penicillin. Every person, female as well as male, should read the section on gonorrhea. Even children are susceptible, and it can be transmitted in ways other than sexual contact. If you learn the facts, you will know how to prevent gonorrhea.

The other venereal diseases are less common and less important. They are: chancroid, lymphogranuloma inguinale, and venereal warts (page 716). They will be made evident, in men, by sores on the penis or enlarged glands in the groin, and respond to treatment provided a doctor is consulted while they are in their early stages.

Can venereal disease be prevented in the male? The simplest, most effective prophylactic is the condom (rubber sheath, "safety"). Some males seem to think that it diminishes the pleasure of intercourse, others feel it isn't "manly" to wear one. However, all I can say, as a doctor who has seen some of the really severe cases of gonorrhea or syphilis, is this—if a male must expose himself to the dangers of venereal disease, he can well afford to reduce the physical pleasure a slight amount in return for the mental relief he will obtain after the act by not having to worry about syphilis and other types of V.D. And, too, the condom prevents conception, a very important factor in providing emotional relaxation.

As I think back on some patients who have had venereal disease, I believe the most pathetic males have been those who indulged in sexual

relations during heavy alcoholic sprees—and couldn't even remember the event or the person who had given them a serious disease.

Other methods of prophylaxis toward venereal disease are described elsewhere in this book (page 653).

Nature has been kinder with respect to cancer. It rarely involves the penis.

The **testicles** are not often affected by illness. They can be involved, in adults, as a result of a disease such as mumps (page 422), undulant fever (page 717), or gonorrhea (page 715). The cord which supports them may be invaded by an extension of a hernia, or there may be enlarged veins. The **epididymis** may become diseased. If you notice a swelling, lump, or congestion of the scrotum or testicles, be sure to see your doctor as soon as possible. It may be an early cancer, or some other illness; almost all of these conditions are completely curable if treated early. The skin in and around the **scrotum** may be infected by *ringworm fungus* (page 173), causing the so-called "jockstrap itch." Keeping these areas clean and dry (a simple drying powder, such as that used for babies, is useful) will help prevent these fungus infections.

The **prostate gland**, which plays a part in the process of reproduction (it creates *prostatic fluid*, which helps to make up the *semen*), can be affected by cancer and infections. In men of about fifty years of age or older, it frequently enlarges for reasons which are not yet fully understood. This is called benign hypertrophy of the prostate gland (page 709).

GENITALS (FEMALE)

The anatomy of the female sex organs is illustrated on page 129. I devote an entire chapter to pregnancy and childbirth (page 321). Sterility is discussed on page 318. Chapters 21 and 36 contain sections devoted to menstruation and to the menopause (see pages 444, 762 and 766).

Feminine hygiene does not require the taking of douches. Nature has provided for the cleansing of the internal passages. Altogether too many women have been persuaded to take frequent douches with antiseptic solutions because of advertisements which imply that no woman can be dainty or clean without them. They *can* be the cause of irritation. If you wish to take an occasional douche, it should be of the mildest type, imitating nature's own secretions. Use what is called a *physiological salt solution*, by adding two level teaspoonfuls of table salt to a quart of moderately warm water. The douche should be given under gentle pressure.

Should external or internal pads be used during the menstrual period?

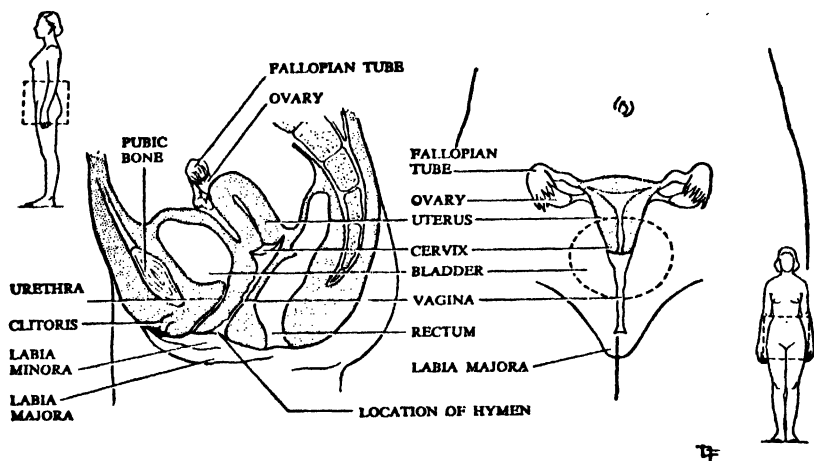


Illustration 6-11. THE FEMALE GENITALIA.

The bladder is shown by dotted lines, in order not to obscure the organs in back of it.

This depends on individual choice. Some women prefer the external sanitary pad, while others like an internal absorptive pad (*tampon*). Either is safe. Each woman should decide for herself, dependent upon the amount of flow and other factors, which type she prefers. An unmarried woman can wear a tampon if her hymen happens to be well perforated; contrary to some opinion, this may be the case even though she has never had sexual relations. Certain kinds of exercise may cause the hymen of a virgin to rupture. (The structure of the hymen is illustrated on page 295).

If the hymen is completely lacking in perforations (an *imperforate hymen*), menstruation may be interfered with, and a minor surgical operation may be necessary.

An irregularity in menstruation, after it has been well established, should be reported to a doctor.

Infections, including venereal ones (syphilis and gonorrhea), can seriously damage the female genitals. A sudden, profuse, odorous, colored, or painful discharge may indicate a potentially serious infection that may not only affect the vaginal passage but could spread into the uterus (womb) and the tubes and ovaries. If such a discharge is accompanied by chills and fever, real trouble may be developing. Such infections can be healed like magic by penicillin or other medicines, provided you give a competent M.D. or hospital clinic the opportunity to help you. Keep away from quacks, advertising doctors, and neighbors and friends who

like to dispense advice about feminine hygiene. *These infections, if not treated promptly, can cause sterility.* Remember that *gonorrheal vulvovaginitis* in young girls can be contracted without sexual intercourse, so be sure not to neglect any discharge in your young daughters.

What can the adult female do to prevent venereal infection? This is frequently considered too delicate a subject even for a health book. However, please remember that physicians are pledged to treat and prevent disease in everyone, regardless of his or her moral status. For those women who are for any reason exposed to the dangerous fire of venereal disease, I can recommend only one safe preventive measure: that is, to insist that the male employ a condom during *the entire time* of the sexual act. Obviously, if the sheath is applied only to prevent conception at the time just before the male orgasm, there will not be protection from syphilis if the male organ has a syphilitic sore on it; nor will protection result if the male is infected with gonorrhea and his germs are present in the lubricating secretions that are produced at the earliest moments of the male erection.

Of course a vaginal discharge, **leukorrhea**, is not always serious. A certain amount of fluid is normally produced to keep the tissues moist. It is practically odorless and colorless, and is not irritating. Congestion, tension, and minor inflammations can increase this discharge. Germs far less dangerous than those causing syphilis and gonorrhea can cause infections which may become troublesome unless they are cleared up. Your doctor must find the cause of the infection before he can prescribe the right treatment. That is why you should not use an antiseptic or germicidal solution as a douche unless you are under a doctor's orders; you may be "curing" the wrong infection! (See page 770.)

The female organs are subject to tumors and cancers, and should be examined regularly at your medical checkup. Any unexpected bleeding or discharge, especially after the menopause, and any change in menstruation, should be immediately reported to your doctor. Even if these symptoms are due to a cancer, the percentage of cures is *very* high if the growth is detected in its early stages (Cancer, page 620).

* * *

We now go to the external organs of the body. Because they are located externally they are subject to more frequent accidents and require more attention by you than many of the internal organs. Everyone of us has been faced with the problem of a cinder in the eye or a cut in the skin, but most of us will go through life without a foreign body in the brain or heart or a cut in the lungs or other vital internal organ.

Even though these sections on the skin and eyes are long, I truly believe you will obtain a rich reward by reading them carefully.

EYES

The eye is like a camera (see Illustration 6-12). The front part consists of the *cornea*, the transparent arca in the center, which is surrounded by the *sclera*, as the white of the eye is called. Behind the cornea is the colored part, in the middle of which is the *pupil*, which grows larger or

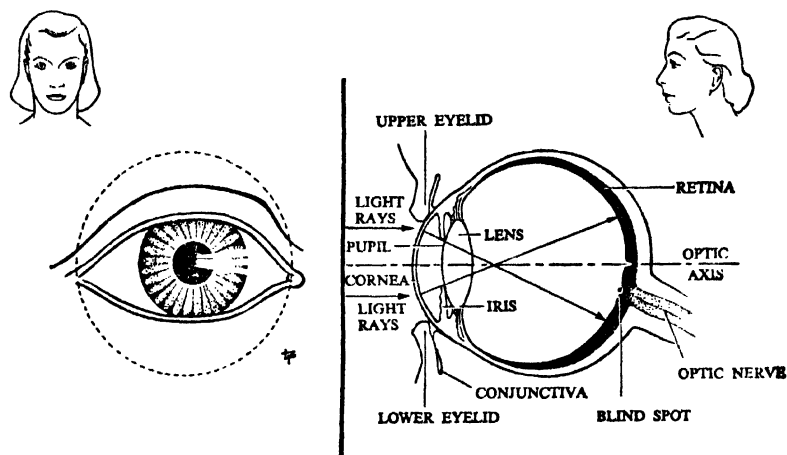


Illustration 6-12. THE EYE.

LEFT: Front view. The approximate orbit of the eye is indicated by dotted lines. RIGHT: Side view, showing the light rays passing through the lens.

smaller to control the amount of light let into the “camera.” The clear, transparent *lens*, located slightly in back of the front surface, focuses the image on the *retina* which is about three quarters of an inch behind it. The *optic nerve* carries the picture from the retina to the brain. The eye also contains muscles to do this work, and fluid to keep the parts in working condition.

If I asked you whether you would mind being blind, you would call it a ridiculous question. Most people consider blindness the worst thing that could happen to them. But you’d never guess it from the way they treat their eyes!

Probably some of you who are reading this have to squint to do so, or hold the book close to your nose, or wish your arms were longer so you could hold it farther away. You know you *should* have your eyes examined—but you put it off because it can wait, or because you don’t want to be told you have to wear glasses. Even some serious eye conditions have been neglected, with tragic consequences, for these foolish reasons.

One such condition is **glaucoma**. In this disease, pressure within the eyeball seriously injures the vision. In the acute type of glaucoma, dimming of the vision may be sudden: the eyeball becomes painful, and the affected person feels quite ill. However, the insidious type of glaucoma doesn't cause pain, and injures the vision very slowly. Sometimes it may make itself known by the appearance of colored rings and halos about bright objects, or by the fact that the vision in front remains good while that on the sides becomes dim. About half of the blindness occurring in adults in this country is due to glaucoma, which seems particularly to affect women after they have reached middle age. There is a great deal that can be done to preserve the vision in most cases, provided the disease is caught in time. It is easily recognized by a doctor specializing in the eyes (an *ophthalmologist*). Isn't it foolhardy not to have your eyes examined once a year after you have reached the age of fifty? Once every three years is sufficient if you are between twenty-five and fifty.

Cataracts impair the vision of many elderly people and some younger ones. These are opaque spots which form on the lens. Why put off going to the doctor if you suspect you have cataracts? They can be removed surgically at any time and practically any age. It isn't necessary to wait for the cataract to become complete, or "ripe," as was believed in the past.

Infections of the eye can be serious. Today, even the chronic eye infection called *trachoma*, and other diseases that used to cause blindness such as tuberculosis, gonorrhea, and pneumonia, can be cured by the "wonder drugs." Don't decide for yourself that an eye infection is nothing to worry about.

Of course there are minor eye infections, the most common of which is **conjunctivitis**, or **pink eye**. In this disease, the eyes become red, the lids swell and are usually stuck together in the morning. There are a number of home remedies for pink eye, of which I consider the following the best: (1) Wash the eye clean with warm water, using a disposable tissue or cloth (otherwise the infection may be spread to the other eye, or to some other person). (2) Apply yellow oxide of mercury ophthalmic ointment generously on the lids, and close the eye. Use the ointment morning and night. (3) Apply hot compresses, moistened with clean water, for 5 minutes 3 or 4 times each day. *If the eye doesn't improve quickly, consult your doctor.*

However, I think it is unwise for you to diagnose and treat any other form of *eye infection* yourself. (Our eyes are too precious to take even slight risks.) If you can't reach a doctor, and find your eyes are severely inflamed or have pus in them, use the following **emergency measure for eye infection**: Put a generous amount of *ophthalmic ointment* containing penicillin or some other antibiotic on the inner lids, and then close the

eye so that the ointment gets at the eyeball itself. Repeat every 3 hours until you get medical help.

It is safe for you to treat an *occasional sty* (an infection resembling a pimple in the tiny glands of the eyelid) at home. Apply hot compresses every 2 hours for 15 minutes at a time. If the sty doesn't open and drain, and heal in a few days, be sure to see a doctor. See him, too, if you have styes repeatedly.

Cleaning the Eyes. If your eyelids become irritated by wind or dust, you can relieve them by washing them out, using an eye dropper or an eyecup, as you prefer, with a warm solution of pure table salt—a level teaspoonful to a pint of warm water, being sure that the utensils you use have been thoroughly cleaned and scalded. It is *not* necessary to wash your eyes as a routine measure. Nature has provided for that through the tear glands. So *don't* use any kind of eye drops or wash your eyes every day with any solution. Incidentally, *boric acid* does not warrant its reputation as an antiseptic for the eyes. All you should do to keep your eyes clean is to wash the skin around them. Always use a clean wash-cloth, your own, not one someone else has used. Be careful not to rub your eyes with your fingers.

Eye injury. Of course you can't be too careful in guarding your eyes against accidents at home or at work. Always see a doctor *immediately* if you have hurt an eye. Delay can mean the loss of an eye, or even total blindness. Dirt, cinders, and other bits of foreign material are so apt to get into the eyes that everyone should read the section (under First Aid, page 485) in which I tell you what to do and what *not* to do when this happens to you or someone in your family.

Eye strain can best be treated by putting an end to the conditions that are causing it. *Improper lighting*, especially when reading or using your eyes for other close work, is a frequent cause of eye strain. Don't face the light; it should come from in back of you and from the side so you won't be in your own shadow. Be sure the light bulbs are strong enough (75 to 100 watt) and are not dusty. Hold your book or paper about 16 or 18 inches away from you and a little lower than eye level. Reading when you're lying on your back in bed or propped up on an elbow will strain your eyes, and so will reading for a long time in a vibrating train or subway. Rest your eyes from time to time by looking off into the distance—which is easier said than done, I know, in some places. Avoid glare.

If you are in the *bright sun*, dark glasses can protect your eyes—*good* sun glasses, that is. Poor ones can add to your troubles, especially if you wear them for a long time, and so can glasses that fit so badly you see the rims. Don't wear glasses with irregularities or scratches in them: plastic lenses scratch very easily. Some glasses are too lightly tinted to do

any good. Unfortunately, good sun glasses are expensive. The best ones, which have ground and polished lenses, are made by the American Optical Company and by Bausch and Lomb; however, Sears, Roebuck sells a satisfactory pair for a lower price. Don't look directly into the sun even though you are wearing glasses, and don't wear them indoors and at night—even though some Hollywood stars consider it smart!

Movies can cause eye strain if the lighting is poor, the film flickery, or you sit too far to the side—or if you're such an addict that you go practically every day. It is easy to become addicted to television without realizing it, and this, too, can cause eye strain. Television won't hurt your eyes if you have a fairly large screen, unless you have the room totally dark, sit too close or at an angle, or watch too steadily for a long time. I think it is wise to be arbitrary about children watching television, and set the limit at an hour, with a good long rest period before the next program. It is best, too, to mark a spot about six feet away from the set, because children are apt to sit practically next to the screen.

A most important source of eye strain is in our eyes themselves. A large number of us are *nearsighted*, *farsighted*, or *astigmatic*. These conditions are caused by the shape of the eyeball. It may be formed in such a way that the lens focuses well on nearby objects but not on those at a distance, or vice versa; or it may "squeezed" out of shape so that things look slightly distorted to the astigmatic eye no matter how hard the focusing muscles work. *Strabismus* (also called cross-eyes and squint) is caused by an imbalance of the muscles of the eyes. Babies are apt to be cross-eyed, but they should begin to lose this tendency by the time they are three months old. Don't put off consulting a doctor if your child is cross-eyed. His vision may be impaired unless he is given glasses. Sometimes these will correct the condition, but sometimes a fairly simple surgical operation is necessary.

Fortunately, nearsightedness, farsightedness, and astigmatism are readily corrected by wearing the proper eyeglasses. It is essential for these conditions to be corrected, not only to prevent eye strain but to keep them from getting worse. If, for example, one eye is normal and the other is not, the good one will do all the work, which is bad for it and also for the one that is not being used. Even if your eyes have always been perfect, they tend to change as you get older, and they are then unable to adjust to anything close at hand. That is why you should have your eyes examined as soon as you find yourself holding things off at a distance in order to see them, or notice that you cannot see as well as you used to in a poor light. Always have an eye doctor examine your eyes and prescribe the proper lenses. In some places you can still buy eyeglasses over the counter. Think about how much your eyes mean to you, and resist this temptation to economize!

I must confess it is difficult for me to understand why so many people object to wearing glasses. It is true that they are an expense and a bit of a nuisance, but what a joy it is to see properly, and to know you are protecting your precious sight! Fortunately, glasses have become so "glamorized" that resistance to them is disappearing.

For actresses and others in special occupations who would find ordinary glasses a real handicap, contact lenses which fit directly over the eyeball are a boon. However, they are expensive, are not always easy to insert, and can usually be tolerated for only limited periods. These new types of "invisible eyeglasses" are constantly being improved. Your eye doctor can advise about their suitability for you.

It is most unwise to try to avoid wearing glasses by spending hours on various systems of exercises which have not as yet been scientifically proved effective. Exercising the eyes can help under some circumstances and, in themselves, the exercises usually don't do any harm. Their main danger lies in the fact that they may be used when poor vision is due to some eye disease such as glaucoma, or in the fact that people who use the exercises fail to go to an ophthalmologist who might, in his examination, discover some illness that first reveals itself in the eyes. "Pop-eyes" for example—that is, eyes that are prominent and staring—may mean an overactive thyroid gland which, unless corrected, may lead to serious damage of the heart. Isn't it wiser to see an eye specialist who has spent four years at medical school and five more in postgraduate training, rather than to depend on an untrained faddist who is endorsed by other untrained people? The specialist will *really* know if you need corrective exercises or glasses.

EARS

The ear is made up of three parts, the *outer ear*, the *middle ear*, and the *inner ear* (see Illustration 6-13). The part you see, that is, the *lobe* and the *ear canal*, make up the outer ear. The canal leads to the *eardrum* and the middle ear in which lie the "bones of hearing," called the *hammer*, *anvil*, and *stirrup* because of their resemblance to these objects. The middle ear is connected to the upper rear part of the throat by the *Eustachian tube*, and with the *mastoid cells* inside the skullbone just behind the outer ear. The inner ear contains the *semicircular canals* (or *labyrinth*) which are essential to our sense of balance, and the *cochlea* in which nerves analyze the sounds from the outer world and carry them to the brain.

Ear infections do not usually come from outside, as some people be-

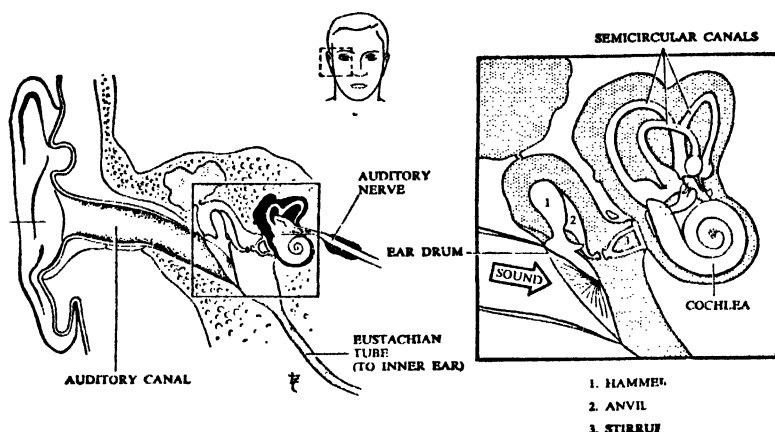


Illustration 6-13. THE EAR.

lieve, but from the nose and throat through the Eustachian tube. That is why inflamed tonsils and adenoids, a severe cold, sore throat, or sinusitis are usually accompanied by a sense of pressure or pain in the ears. Infection may spread up the Eustachian tube into the middle ear, especially in children. Your doctor can prevent this, which is one of the reasons for calling him whenever you or a member of your family has a sore throat, a severe cold, or sinusitis.

If the middle ear becomes seriously infected, the hearing device may be destroyed. The infection may spread, causing rupture and destruction of the eardrum. It may continue into the mastoid cells, and unless checked there can enter the nearby brain and its covering. Children are very susceptible to middle ear infections. Before the development of the "wonder drugs," **mastoiditis** was a common, and rightly dreaded, disease, especially in children. Now, if a doctor is called in early, he can control these infections successfully. Operations for infected middle ears and mastoids, which were so common until recently, are fortunately seldom necessary today.

Infections which injure the hearing can also be caused by *foreign objects*, such as beads or pencil erasers, which very young children sometimes push into the ear canal. *Such objects should be kept away from them.* Adults can cause similar trouble by "cleaning" their ears with hairpins, match sticks, or other long objects. There's a lot of sense in the old saying, "Never put anything smaller than your elbow into your ear." Follow this rule for **cleaning the ear canal**: what you cannot remove with your little finger, which has previously been thoroughly cleaned with soap and water, should be removed by a doctor or nurse or at an ear

clinic. If wax is deeply embedded, a doctor can wash it out with an ear syringe; ask him to show you how to do this if wax tends to accumulate frequently in your ear canal. Never try to clean out a child's ear unless a doctor or nurse has given you instructions. Ordinary washing of the external portions with soap and water is all that is necessary in most cases.

Some people believe that a **chronic running ear** cannot be cured. This is completely false. It is possible to cure almost every case of chronically infected ears. Sometimes it may be necessary to go to an ear specialist or to a hospital many miles away, but it is always worth while to clear up a condition which may ruin your hearing or that of your child.

Swimming rarely causes any trouble to the ears unless there is an infection in the nose, sinuses, or throat. Learning how to breathe *in* through the mouth and *out* through the nose when you are swimming will help prevent this. Of course, the situation is different with a **perforated eardrum**. In that case, you *must* have your doctor's permission and advice before you go swimming. Once in a great while the eardrum can be perforated by the pressure of high diving. Pain, and sometimes bleeding, will result. If you see a doctor immediately afterward, there will probably be no permanent harm from such an accident.

Infections are not the only cause of **deafness**. The changes of old age may gradually bring on deafness, which in many cases can be somewhat relieved by a doctor. Another type of deafness, called **otosclerosis**, may start in earlier years. A special operation has recently been devised to relieve this serious type of deafness. Your doctor will probably need the help of an ear specialist (*otologist*) to decide whether this type of hearing loss can be helped in this way.

Many types of deafness can be corrected or greatly helped by **hearing aids**. It is tragic to think of all the people whose lives have been seriously handicapped because, as I have so often heard a deaf person say, "People will make fun of me if I wear such a thing." Personally, I can't see anything funny in today's well-designed hearing aids. I wish everyone who needs one would forget the ancient and seedy jokes on the subject, and think of hearing aids in the same way we are learning to think of eyeglasses. Since all types of deafness are not alike, these instruments vary, and it is important to find the right one. An ear specialist, not a salesman, can give you the right advice. I discuss hearing aids for the elderly on page 798.

The most important thing you can do to prevent deafness is to have your hearing, and especially that of your children, tested, and to see a doctor the minute you or your child feels any pain or notices any unusual buzzing, ringing or pressure in the ears, or experiences any loss of hearing.

NOSE

The nose, with its bones, cartilage, nerves, and mucous membranes (which contain glands secreting a watery fluid) is the organ of smell; and, more important, it is the means by which we take air into our bodies. We can—and some people do—get along by breathing through the mouth. While this is not dangerous, as some people believe, it is by no means satisfactory. The nose is a far better “ventilator.” It filters out dust, provides moisture, and acts as an air-conditioner by warming the air we take in.

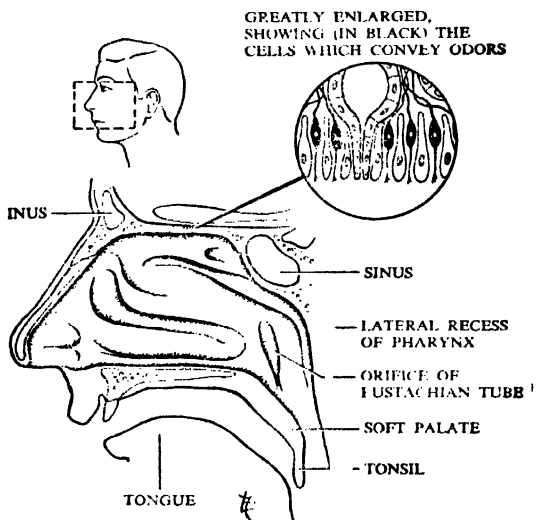


Illustration 6-14. THE NOSE.

Side view. Note the opening of the Eustachian tube which runs from the middle ear.

The most common disease of the nose—in fact, the most common disease in the world—is the **common cold**, which involves the mucous membrane of the upper part of the nose. You'll certainly want to read the section I devote to prevention and treatment of the cold (page 734).

In addition to colds, the following diseases cause **congestion of the nose**: *hay fever* and other *allergies* (page 739), *chronic infections*, *nasal polyps*, *sinusitis* (page 738), and a *deviated* or *crooked septum*. *Adenoids* may also be the cause in children (page 414). Your doctor, or a specialist in Ear, Nose, and Throat (usually referred to as an ENT specialist) can help all these conditions.

Ozeana is a severe form of **infection of the nose**, which causes an un-

pleasant odor. However, a persistent, foul-smelling discharge in children is usually caused by the fact that some *foreign object* such as a bean or pencil eraser is lodged deep in the nasal passage. Always have a doctor take care of this.

How to stop a **nosebleed** is an essential part of the first-aid information everyone should have (page 485). It may simply mean that a small blood vessel in the nose needs to be cauterized, which your doctor can attend to in a few minutes. On the other hand, nosebleeds in children are sometimes a sign of rheumatic fever. They may also herald the onset of typhoid fever. Contrary to popular notions, they are rarely caused by high blood pressure. If your nose bleeds frequently without any obvious cause, it requires your doctor's attention.

Should an **unsightly nose** be changed by **plastic surgery**? This is a problem you should talk over with your doctor. If he advises an operation he will refer you to a surgeon who specializes in this type of surgery. Beware of the many quacks who advertise themselves as plastic surgeons. "Nose-shapers," from the time-honored clothespin to patented gadgets, don't do any good.

Cleansing the nose. Your nose needs little regular care. Don't use nose drops, sprays, or "sniffers" unless your doctor tells you to. Continued use can cause irritation or injury. They won't cure chronic sinusitis or catarrh (**postnasal drip** is one of the current terms for this condition). The chances are that you don't have chronic sinusitis; this condition is quite rare and can only be diagnosed by a physician (see my discussion of sinusitis, page 738). Catarrh simply means an inflammation of the mucous membranes with increased secretions of their glands. It can be caused by a great many things, such as an allergy, a vitamin deficiency, or by spending most of your time in dry rooms filled with cigarette smoke. Nose drops and sprays won't help under any of these circumstances. They will just add to your troubles if your catarrh is due, as it often is, to the fact that your membranes happen to be overly sensitive. I know that a postnasal drip is unpleasant, and it can cause irritation in the throat; but if you won't go to a doctor, the next best thing you can do for it is to leave it alone! I can at least assure you that the mucus which accumulates is *not*, as you may have been told, "full of dangerous germs and will poison you or ruin your digestion if you swallow it." It's quite harmless.

LIPS, TONGUE, AND MOUTH

Most diseases and sores of the lips, tongue, and mouth are either very minor or very serious. The slight cracks from dried-out lips heal readily,

and the irritating lumpy spots in the mouth called *cankers* disappear quickly. But other whitish spots, lumps, or sores may indicate early stages of cancer, or they may be signs of syphilis or some other serious disease. You can usually tell the mild from the serious conditions by the rapidity with which they heal. *Any canker, cold sore, or lump that does not heal readily should be seen by a doctor or a dentist* (it may be due to a rough spot on a tooth which is irritating the lining of the mouth). Even some serious conditions can be corrected if they are discovered early enough, so never delay.

Vincent's angina (trench mouth) is a common infection characterized by sores and ulcers on the lining of the cheeks, the gums, and the back of the throat. Some people, particularly young ones, conceal the fact that they have trench mouth because they have heard that it is "a disease of filth" or "it can only be caught by kissing." Both ideas are false. Never neglect trench mouth. Your doctor or dentist can usually cure it quickly in its early stages, and even later it responds well to penicillin—though by that time it may have encouraged pyorrhea, as I explained when discussing the teeth and gums (page 78).

The *parotid* and *submaxillary glands* in the mouth can be affected, most commonly by mumps, and rarely by tumors or stones that block their passages.

Most lipsticks are harmless unless you happen to be allergic to something in them. They have no value except for their appearance. Cracked chapped lips, from which you may suffer during cold or dry, hot weather, will usually get better if you apply a soothing ointment such as boric acid ointment, petroleum jelly or cold cream.

Your mouth does not need, and may actually be harmed by, "medication" that claims to cure **halitosis** (page 80) and other conditions. Mouth washes, antiseptic lozenges, and gargles come in contact with only the surface of the mouth, and do not reach the germs which are more deeply located when infection is present. They may provide a pleasant taste.

THROAT AND TONSILS

The throat cavity, or *pharynx*, is separated from the mouth by the *soft palate* and the *uvula*, and leads into the *esophagus* (the gullet). The *tonsils* lie on each side of the back of the mouth. Like the *adenoids*, which are located in back of the nose, the tonsils are masses of *lymphoid tissue* which play a part in dealing with germs that enter the throat.

Like your nose and mouth, your throat does not need sprays, gargles, or lozenges to keep it healthy. Avoid them because their regular use may cause irritation.

Sore throats are almost as common as colds, for a certain amount of inflammation in the throat usually results from the cold itself. They may even be due to irritation caused by excessive smoking. If cutting down on your smoking, and gargling every two to three hours (I suggest a third of a glassful of warm water containing two crushed aspirin tablets) does not bring relief in a few days, visit your doctor or a hospital clinic. *Serious conditions may begin with a sore throat (see page 413).*

Any **acutely sore throat** accompanied by fever in either an adult or a child may mean trouble. It may indicate the early stages of *diphtheria* (page 425), *scarlet fever* (page 415), a *septic sore throat* (an acute streptococcus infection) (page 413), or a *serious infection of the tonsils* (tonsillitis) (page 413). Be sure to call a doctor or go to a hospital immediately. If these conditions are treated promptly, they can quickly be cured. You may wonder why your doctor gives you an injection or some pills to swallow instead of applying something directly to the infected throat area. He does this because local applications do not reach the germs which are below the surface, whereas medication taken internally attacks the germs through the blood stream. *Penicillin* works wonders in most throat infections. However, if a doctor is available, don't take it in any form, not even penicillin lozenges, unless he says you should. Always be very careful to avoid getting fatigued or chilled while you are recovering from a sore throat. These simple precautions will help prevent you from getting a serious illness such as *pneumonia* (page 642) or *Bright's disease* (page 610).

Removal of tonsils. Should your child's tonsils (and adenoids) or your own be removed? Certainly not as a routine measure. If they are chronically diseased, that is, so full of germs that they can't possibly act as a protection but become a source of infection themselves, they should be taken out. The fact that they are large is not, in itself, cause for removal. Only a doctor—not a friend or neighbor—is qualified to decide whether or not tonsils should be removed. He will take into consideration not only the tonsils themselves, but the condition of the individual, and the time of the year, avoiding seasons when polio (infantile paralysis) and certain other diseases are prevalent (see polio, page 680).

LARYNX, TRACHEA, AND NECK

The *larynx*, which projects itself on the outside of the body as the Adam's apple, is part of the breathing apparatus. Its main function, however, is to act as a voice box in producing sounds.

Hoarseness is a sign that something may be wrong with your larynx. Naturally, if you have been shouting and cheering at a football game the

day before, the reason is obvious. But if hoarseness or a change in your voice comes on without apparent cause, and lasts longer than a few days, it may indicate a tumor, tuberculosis, or some other potentially serious condition of the larynx. Immediate attention is essential. See your doctor or the throat specialist he recommends, without delay.

The *trachea* is the windpipe through which air enters and leaves the lungs. (See Illustration 6-5, page 111.) It is connected with the throat by way of the larynx. Although it is protected by a lid (the *epiglottis*), food particles sometimes get into it; most of us have, on some occasion, "swallowed something the wrong way." People, particularly children, have choked to death because an object large enough to block the trachea completely has entered it, or has lodged in the throat and shut off the passage of air. This is one of the situations in which a knowledge of first aid can mean the difference between life and death (see page 479 for emergency treatment). One reason I have cautioned you against using nose or throat drops and sprays lies in the fact that they (especially if they have an oily base) may be inhaled through the windpipe and irritate it, the bronchi, or the lungs.

The neck contains the *thyroid gland* (page 93), an endocrine gland which is subject to several disorders that respond readily to treatment if it is started early. *Simple goiter* (page 94), now quite rare, reveals itself in an enlargement of this gland which is located below the Adam's apple and slightly above the notch of the breastbone. A more serious type of goiter is caused by an overactive thyroid gland; this is called *hyperthyroidism*, *Graves' disease*, and *exophthalmic goiter* (page 94).

You are probably familiar with a fairly common condition of the neck usually called *swollen glands*. This is an enlargement of the *lymph nodes*, usually called the *lymph glands*. If these glands are painful, it means that there is an infection somewhere in the head. It may be in the scalp, for example, and be caused by nits or cuts and sores; or it may be due to sore throat, tonsillitis, sinusitis, and other types of infection. Relatively painless swollen glands may be caused by potentially serious illnesses such as tuberculosis (page 642) and *Hodgkin's disease* (page 623).

Make it a rule to see a doctor immediately whenever a swelling occurs in *any* of the glands of the throat. Let him know if you notice unusual lumps of any kind. They may not mean anything serious, but the cause *must* be satisfactorily established.

Wryneck (*torticollis*) is the term applied to an abnormal twisting in which the head is continually pulled to one side. Its cause is not entirely understood. If the condition is present from birth or childhood, it can often be corrected by *scientifically directed* massage and stretching of the involved muscles. In adults, it can be due to chronic rheumatism.

FEET

I am going to tell you a good deal about how to care for your feet because many of the troubles involving this part of the body are due solely to improper care, neglect, or downright abuse. I am inclined to believe that the feet cause a big percentage of *avoidable* man (and woman) hours of suffering in the world. Seven out of ten people have some foot trouble. I don't know why they endure this type of pain stoically, when a far smaller amount of suffering in any other part of the body would send them rushing to a doctor. (Incidentally, people seem to be more reluctant to consult a doctor about the two ends of their bodies, the feet and the mind, than they are about any of the parts in between!)

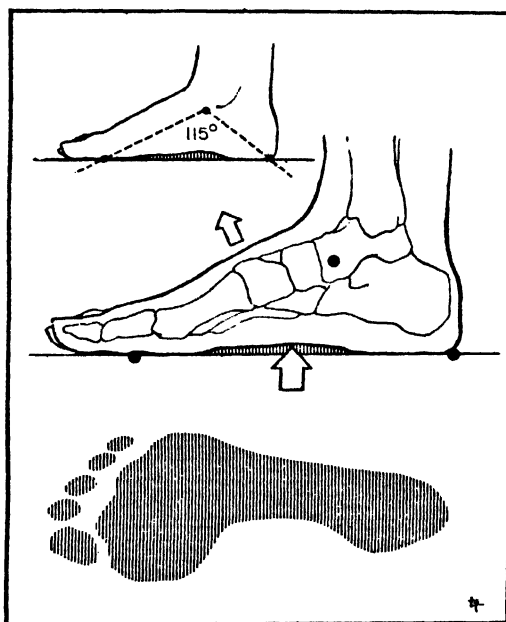


Illustration 6-15. A NORMAL FOOT.

Note the correct angle (indicated by dotted lines), the "bridge," and the footprint.

Although certain foot conditions require the attention of a doctor, most of them can be prevented or helped by things you can do yourself.

First of all, wear **proper shoes**. If your foot is normal, choose a flexible shank shoe with round toes and a straight inner border. It should be long and wide and deep enough not to cramp the toes or restrict the circula-

tion. *The cut of the vamp, and the trimmings and straps of women's shoes often interfere with the circulation. Shoes should be small enough to fit snugly around the heel and provide some support. Medium heels are best and rubber ones provide good "cushions" for walking on hard surfaces. Wearing spike heels puts your weight on the big toe instead of on the heels where it belongs. However, alternating between high and low heels won't, of itself, cause any damage and it is certainly better than wearing high heels all the time. In the summer your feet need better ventilation, so your shoes should be roomier and made of lighter, more porous material. Have two pairs of shoes in regular use and wear them alternately, keeping the other pair on shoe trees so they will hold their shape while the perspiration they have absorbed dries out of them.*

Foot troubles. If you think your feet are *not* normal, *don't* buy any kind of "remedial" shoes or get arch supporters without consulting a doctor. You may be "correcting" the wrong thing; or your troubles may be due to something entirely apart from the shoes you're wearing. Your socks or stockings may not fit properly, thus bending or cramping the toes, or causing calluses and blisters. Your feet may be swelling because your garters restrict the circulation. You may be putting too much of a burden on them because you are overweight (page 41).

You may have to stand or walk too much on hard surfaces. Walking around a little helps to relieve the strain of standing; and getting your feet up on a couch or footstool for even a few minutes' rest at a time often does wonders. You may not be standing or walking properly. When you stand, your feet should be parallel with each other, not toeing out. When you walk, your footprints should make tracks that would almost touch a straight line drawn between them, with the heels just a trifle further away from the line than the toes. This is not walking pigeon-toed, but it certainly isn't toeing out, which is fortunately no longer fashionable.

Your foot troubles can be due to **flat feet** or **fallen arches**. Both these conditions should be diagnosed by a doctor (*not* a shoe salesman) who can help you to cure them. Flat feet can be inherited, or due to overweight, or to wearing improper shoes in childhood. If you think you have flat feet or fallen arches, the following exercises may help; they won't hurt you if your diagnosis is wrong, provided you do them in moderation.

With your shoes off, sit in a chair and pretend there is sand on the floor, and that you are heaping it into a pile between your feet by drawing them together in a scooping motion.

Put some marbles on the rug in front of you; pick one up with your toes and throw it forward.

Repeat these exercises, but stop if your feet become tired.

Corns and **calluses** can cause a great deal of suffering. The best way to avoid them is by wearing shoes that fit. Corns are of two varieties:

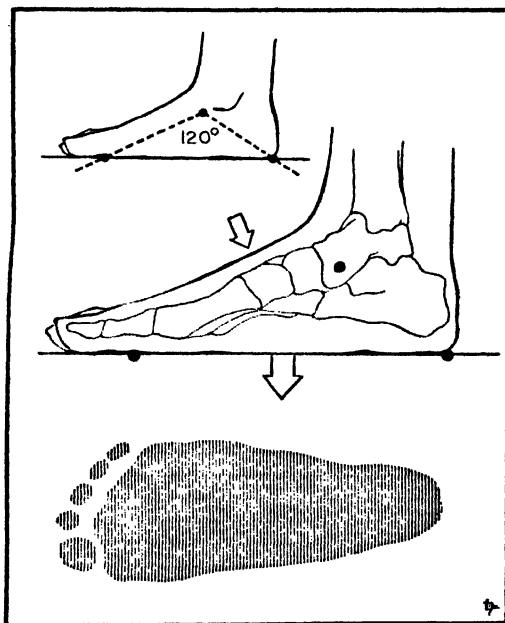


Illustration 6-16. FALLEN ARCH.

The angle (indicated by dotted lines) is wider, the “bridge” is lower, and the footprint is solid.

hard corns, usually found on the outside of the little toe, and *soft corns* between the toes. They are hardened or thickened skin which, unlike a callus, have a central point or core.

I have seen so many people get into trouble by using corn remedies or cutting their own corns that I wish everyone would have them removed by a podiatrist (a person who specializes in care of the feet). However, common sense tells me some of you are going to go right on attending to your own corns, so I'll give you directions for the best way to do it—with the following provision: anyone who is not in good health, who suffers from poor circulation, and, above all, *anyone who is a diabetic should never treat his own corns*. In addition, never treat corns or warts on the *soles* of your feet as they are usually caused by an infection, and you can do a great deal of harm by treating them yourself. Injections of *Novocain* have been found to be extremely useful in relieving the pain caused by warts on the soles of the feet, and in some cases have made the warts themselves disappear.

Don't use commercial corn removers as they are usually too strong. For hard corns, soak the toes in warm water for about fifteen minutes,

apply a drop or two of 10% *salicylic acid in collodion*. Cover the corn with a plain cornpad of the right size, and leave it on for three or four days. Then soak the toe again; the corn will probably lift out easily. If it doesn't, see a podiatrist. For soft corns, pare down the horny rim very carefully with a razor blade or scissors (which has been thoroughly washed and scalded, or left for a few minutes in alcohol), taking great care not to cut too far. If you should nick the skin, apply iodine and *leave the corn alone*. After you have pared the corn, cover it with a plain pad or piece of adhesive plaster, to protect it from pressure, and keep it as dry as possible. It will probably get better; if it doesn't, see a podiatrist. *Calluses* can be removed by paring them off carefully.

A **bunion** is a deformity of the big toe, almost always caused by wearing shoes which force it to turn toward the other toes. It is frequently associated with flat or weak feet. In mild cases, the pain can be relieved by heat, and the condition will correct itself after properly fitting shoes have been worn for some time. In more severe cases, a physician should be consulted, since a surgical operation may be necessary to correct the condition.

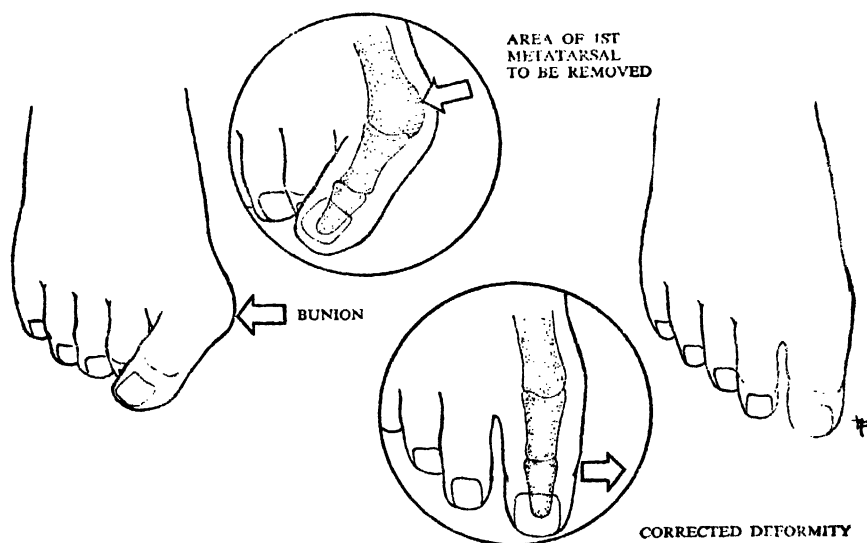


Illustration 6-17. A BUNION, BEFORE AND AFTER SURGICAL CORRECTION.

Ingrown toenails can be prevented by wearing good shoes and by keeping the nails short, with the sides a little longer than the middle. Badly ingrown toenails should *always* be treated by a doctor or podiatrist since a serious infection may result. If you have a slightly ingrown toe-

nail, insert a tiny bit of cotton that has been soaked in castor oil under the ingrown edge of the nail; protect the nail from pressure by a pad of clean gauze.

Athlete's foot (*dermatophytosis*) is another condition which frequently requires a doctor's attention. It is caused by a fungus which is a tiny form of plant life. This organism grows on the dead cells that make up the calluses and "old skin" of the feet, and thrives on warmth and dampness. It causes itching or burning spots, and often blisters, usually between the toes. In addition to the discomfort it causes, it provides sites for more serious infections. If you insist on treating it yourself, the following method is safe:

Dry your feet thoroughly and keep them as dry as possible. Wear socks that will absorb moisture without being so rough as to irritate the skin, and shoes that fit well without being "air-tight." After drying your feet, apply a mild alcoholic solution—rubbing alcohol or toilet water. Dry again. Put some plain unscented talcum powder on your feet and in your shoes. Keep your toenails short. Gently remove all scaly, soggy, or horny material from between your toes and from the soles of your feet. Put pledgets of lamb's wool or absorbent cotton between the toes if they are too close together. And use Desenex ointment over the infected, itching areas morning and night.

You may also try the following method when the lesions are moist and oozing: Soak the feet in 1:15,000 solution of potassium permanganate (made up by a pharmacist) morning and night 10 minutes at a time. The permanganate causes the skin to turn brown temporarily.

If the condition doesn't clear up, *don't* buy a remedy at the store. See your physician. You may not have athlete's foot at all, but some other skin condition that resembles it; or you may have an allergy or be sensitive to something with which your feet come in contact.

Other things that you can do to help care for your feet include: Keep them clean. Bathe them at least once daily, drying them carefully, and dust them with a plain talcum powder. It often helps to put them in hot water for a minute or two, then into cold water for just an instant, after which they should be rubbed briskly as they are being dried. Tired feet are often relieved by massage; use a kneading, rotary motion of the hands, with some plain cold cream, olive oil, or cocoa butter if they are dry or irritated. The following foot powders help check unpleasant perspiration, and also reduce the danger of epidermophytosis. Use *Desenex powder* or a preparation made as follows:

Thymol, 0.5 grams

Salicylic acid, 2.0 grams

Talcum sufficient to make 100 grams

Apply either powder morning and night. If excessive perspiration persists, see a doctor.

SKIN

The skin is the largest organ of the body. I shouldn't wonder if it seems strange to you to think of it in this way, because it did to me when I was a medical student.

FUNCTION AND STRUCTURE

The skin has many functions, the first and most obvious of which is to serve as an envelope, a *protection* against germs and cold and against the drying out of the body's vital fluids. The skin is resilient and tough enough to protect the soft underlying tissues from bruises and other mechanical injuries. In addition, it helps to *regulate* the body's temperature by the evaporation of perspiration and by contracting or relaxing the superficial blood vessels; it acts as an *organ of sense* because of the many nerve endings it contains; it can *absorb* certain substances; and it plays a part in the process of *elimination*. It's fortunate indeed that the skin is able to "grow back" and renew itself quite well when a portion of it is destroyed.

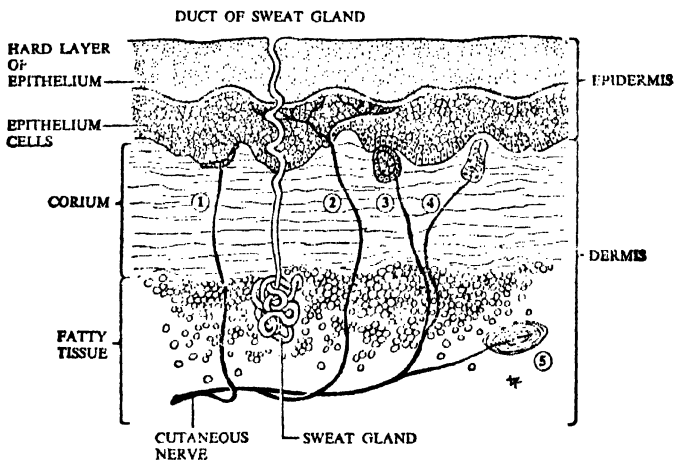


Illustration 6-18. STRUCTURE OF THE SKIN.

The numbers indicate the sensory nerve endings: 1. warmth; 2. pain; 3. cold; 4. touch; 5. deep pressure.

The *skin* is made up of two layers, the outer (called the *epidermis* or *cuticle*) and the inner (called the *dermis*, the *corium*, or the *true skin*). The amount of pigment in the lower portion of the epidermis determines whether the skin will be black or yellow, brunette or blond. *Hairs* are epidermal growths, and *nails* are a modification of the epidermal cells. The *sebaceous glands*, which open into the *follicles* from which the hairs emerge, produce lubricating and protecting oils. The *sweat glands* lie coiled about in the dermis with ducts leading to the surface.

The skin reflects a great deal about the state of the body, as you have undoubtedly noticed in some sick people; and also the state of the mind, as you can plainly see when someone is blushing from embarrassment, or pale with fear.

CARE OF THE SKIN

Normal skin requires chiefly to be kept clean with soap and water. Always use a *clean* wash cloth or complexion brush. Don't massage the soap into your skin. Always rinse thoroughly. Normal skin tends to become dry with middle age, so that a plain cold cream or oily lotion is helpful. In the winter, use less soap than you do in warm weather, and always dry your skin thoroughly. Germicidal soaps and antiseptics are not necessary for either men or women. They can be irritating, and healthy skin isn't bothered by the germs that land on it. Of course you should take care of cuts and abrasions.

The most important thing to do for your skin is to observe the suggestions in the chapter on general care of the body (page 3). Avoid infections and irritating substances while you are at work (page 193), and in the preparations you use on your skin (page 743 on allergy).

SHAVING (FOR MEN)

Almost every man I know is absolutely certain that his method of shaving is the best ever devised. I think that is true of mine, too! I give it here for those who are starting to shave, or who are troubled by frequent cuts or infections.

Because infections can be carried from the hands onto the face, I always start by cleaning my nails and washing my hands as carefully as I would before examining a patient. Then I wash my face briskly with warm, soapy water, and dry it gently with a clean cloth. Now I start applying the shaving cream. Having a really tough beard, which frequently must be shaved twice a day, I use very warm water, work in the brushless type of cream carefully, and then let it stay on, warm and wet, for 2 to 3

minutes. Now I shave, always using a fresh blade in a good-quality safety razor. I find it rare to cut myself since I adopted the following routine: to sit in a comfortable chair, using a good shaving mirror. I try to keep my mind—at least partly—on the shaving, rather than on the day's work ahead of me. It is helpful to stretch the skin in front of the path of a safety-razor blade, the way a professional barber does with his straight-edge blade.

After the shave is completed, I wash my face completely with warm water, and follow with generous amounts of after-shave lotion (ask your druggist to give you pure 70% alcohol if you don't react well to the perfumed solutions). Then I powder, especially over any areas that look chafed.

For cuts: The ordinary small cut will stop bleeding if you merely dab on cold water with pieces of clean tissue paper. Then stick on a piece of dry tissue paper. Usually by the time the shave is finished, you can remove the tissue gently with cold water, and the bleeding has been effectively stanchd. If necessary, use a styptic.

For infections: I haven't had one in so many years after following the above routines, that all I can say is that "prevention is worth more than cure." However, if you do have an infection on the face, shave around the area. (I discuss skin infections on page 158). When infection is present, discontinue using a shaving brush if that is your method. Use a new blade each time, and shave the noninfected portions of the face first. If the infection covers a fairly large area, your doctor may want you to continue shaving daily, even over the infection, so that the medicine he prescribes can penetrate better into the infected hair follicles.

Electric razors: Men who use electric razors insist that anyone who gives them a fair try will be converted. For men with heavy beards whose work requires them to be free from "5 o'clock shadow" for late business calls or meetings, having a spare electric razor at work can be a godsend.

EXCESS HAIR IN WOMEN

Excess hair can be unattractive, and I don't blame anyone for wanting to get rid of it. But why not try bleaching first, using ordinary peroxide to which a drop of ammonia has been added? (Avoid bleaches containing sodium perborate.) If you must remove excess hair, the simplest way to do it is by shaving. If you use an electric razor (and there are some made especially for women), your skin won't become tough. Despite what you may have heard, shaving does *not* encourage the growth of hair or make

it coarse. It's better and far easier than rubbing hair off with an abrasive such as pumice, and far less painful than pulling out hairs with tweezers. If there aren't too many excess hairs, you can cut them off very short with a pair of cuticle scissors.

Be very careful about the use of a *chemical depilatory* on the face; the waxes are safer, though painful. If you do use a chemical depilatory on your body, be very careful not to get it into your eyes. *Always try it on a small spot of skin to see whether it is irritating.* Don't use one more often than once every two weeks, and discontinue immediately if the skin becomes inflamed or itches.

None of these depilatories will remove hair permanently. Permanent removal is difficult and tedious. Keep away from quacks or people who advertise miraculous methods for removing hair. Your doctor will help you find an expert who can do this work with safety to you, so that you won't find you have substituted ugly scars and pits for your excess hair.

WRINKLES

What about *wrinkles*? Massaging your skin won't prevent them; in fact, it won't do anything except, possibly, make you feel good. If your skin is dry you can help avoid wrinkles by using creams, and by not overdoing exposure to the sun, which tends to encourage them. "Skin foods" won't do any good; your skin doesn't need these products because it, like any other organ, is fed by your body. Wearing "wrinkle eradicators" or "masks" to bed every night won't do any good either. In fact, once wrinkles or lines have made their appearance, the only way to get rid of them is by plastic surgery. This is expensive, lasts only a few years, and should be done *only* by a surgeon experienced in this field (a plastic surgeon). I consider it worth while in only rare instances, as in the case of an actress whose youthful appearance may be important in her profession. As far as the average woman is concerned—why not just avoid frowning and smile instead, so that when wrinkles or lines do appear they will add to, rather than detract from, your appearance?

Loose skin that results from obesity can be corrected by reducing and massage. Losing weight at a sensible rate will prevent your skin from becoming loose and wrinkling in this way.

"Wrinkle removers" and "rejuvenating creams" *can be dangerous if they contain hormones*; most of them are useless. Exaggerated claims are made for many lotions, tissue creams, muscle oils, astringents, skin conditioners and so on. If you find yourself sorely tempted to use one, consult your local Better Business Bureau or write to the American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

COSMETICS

Since I'm afraid I've been rather discouraging about "beauty aids," I'm glad to be able to tell you that most *cosmetics* on the market today will not hurt your skin and may improve your appearance. Lipstick, powder, and rouge are usually harmless unless you happen to be allergic or sensitive to them (often, to the perfume they contain). Some lipsticks dry the lips, but experimenting will help most women to find a suitable one. Pancake make-up and powder bases may clog the pores, and it is important to wash them off or remove them with cleansing cream every night.

There is usually no important difference, aside from the appearance, odor, and packaging, between expensive and inexpensive cosmetics.

COMMON SKIN TROUBLES

You've noticed that all skins are not alike. The amount of pigment varies, and so does the number of lubricating and sweat glands.

Pigmentation, spots, and freckles. The less pigment the skin contains, the lighter its color will be; those rare people who have no pigment at all are called *albinos*. If your skin produces little pigment, you should guard against sunburn (page 204). Some people have skin that will *freckle* on exposure to sun. If you are a freckler and have to spend a good deal of time in the sun, expose your skin as little as possible. A heavy sun-tan lotion or face powder will help. Some lotions contain a perfume oil which can cause dark brown spots (*berlocque dermatitis*) so, to be on the safe side, use one without a perfume. White areas (*vitiligo*) that appear on the skin are usually due to a loss of pigment in certain areas. If they are conspicuous the best thing to do about them is to cover them, or avoid getting tanned which makes them more conspicuous.

Do not use a "freckle remover." Anything that is strong enough to be effective may cause a severe inflammation unless it is used under a doctor's supervision. Usually, the best thing to do about freckles is to cover them with face powder or, if necessary, *Covermark*, or a similar preparation. Those people who have such disfiguring freckles that they are unhappy, should ask their doctors to refer them to a dermatologist or a skin clinic for a trial of more intensive treatments. The same is true of the "liver spots" (*chloasma*) which may occur in dark-skinned people. (These marks have nothing to do with the liver, and are simply increases in pigmentation.) Fortunately, many young people "outgrow" their freckles.

Excessive perspiration. This may be due to poor health; night sweats, for example, are characteristic of certain diseases. However, if you are in good health, but perspire excessively, especially under the arms, you can probably control it by a commercial antiperspirant deodorant. These preparations contain aluminum chloride, which is usually perfectly safe, unless you happen to be allergic or sensitive to this chemical. It is always wise to try any preparation cautiously for the first few times, using very little of it until you are sure it is all right for you, and stopping if repeated applications cause irritation. If you wipe off the excess after you apply commercial antiperspirants and deodorants, they usually will not harm the clothing, although they may discolor it. Chlorophyll preparations do not check perspiration, and while they are deodorants, they are no more effective than simply dusting your armpits with plain bicarbonate of soda (baking soda). It does no harm to check perspiration in the armpits, the hands, or the feet, as the rest of the body surface will do the work of eliminating it; but never apply an antiperspirant to the entire body. And don't take too seriously the "scare-propaganda" about "B.O."

The medical name for offensive body odor is *bromidrosis*. Truly offensive body odor is rare; it can usually be prevented by bathing and by using a deodorant or antiperspirant under the arms. No special soap is necessary. Men may prefer to wash under the arms several times a day with soap, then follow with an application of rubbing alcohol which, when dried, can be covered with an absorbent powder such as the ordinary preparations for babies.

Dry skin. An insufficient production of fat by the sebaceous glands in the skin causes dry skin. This often occurs in middle and old age, encouraging wrinkling. If your skin is dry, don't wash it too often with soap and water; use a cleansing cream or oil or a soap substitute. Before going to bed, apply an emollient (lubricating) cream which usually contains lanolin or cholesterol, which is derived from lanolin, blended with vegetable fats and oils. Do not use plain lanolin. Olive oil or one of the commercial products such as *Nivea* cream is satisfactory. Apply more frequently if necessary.

Dry skin is very apt to *chape* during cold weather or when the air is very dry. If your skin becomes chapped, treat it as I have just suggested that you treat dry skin. A commercial lotion or a hand cream is good for chapped hands.

Chafing. This is caused by friction, usually from clothing or the rubbing together of body surfaces, such as the thighs, that are damp with

perspiration. Keeping the parts dry, and using a good plain talcum powder, will usually clear up the irritation.

Prickly heat is often found in infants. It is due to overheating the skin. Keep the skin cool, and use a light powder—a heavy one will block the perspiration and make the condition worse.

Frostbite is due to extreme cold, and usually attacks the nose, ears, fingers, or toes. The cold part should be warmed very gradually. *Don't* rub on snow, or massage the frostbitten area as this can damage the skin. If the frostbite is severe, see a physician as gangrene can result unless treatment is started in time.

Oily skin can be more distressing than dry skin. To correct it, use plenty of soap and water, avoid creams and greasy lotions, and follow the rules I gave you for general care of the body. Go easy on heavy powder or pancake make-up, always washing it off thoroughly at night.

The main problem faced by many people with oily skin is *acne*, which I shall take up next.

ACNE

You probably call them pimples, blackheads, and whiteheads; we doctors call them *acne vulgaris*. This condition is so characteristic of youth that I can't help wondering who coined the slogan "Keep that schoolgirl complexion." As boys and girls approach maturity, their glandular activity increases, including that of the sebaceous glands of the skin. In girls this may become pronounced at the time of their menstrual periods. Certain foods increase the activity of the sebaceous glands, among the worst offenders being chocolate, nuts, sharp cheeses, and fat or greasy food. If the pore opening is small or clogged by dirt or heavy cosmetics, the fatty material made by the sebaceous gland accumulates, and a "bump" appears under the skin—or perhaps a *whitehead* or a *blackhead* (a *comedone*). Blackheads are not due to dirt, but to the discoloring effect of air on the fatty material in the clogged pore. If this substance becomes infected, as it often does, a pimple results. The temptation to squeeze the unsightly pimple should be resisted. A hard push, and the membrane around the pimple is broken, so that the infection spreads to the surrounding tissue; it also spreads on the surface unless it is carefully washed off. The result—more pimples, and scar tissue or pits.

This story is all too familiar, especially to young people. All too fa-

miliar, too, is the suggestion that "you'll grow out of it, so grin and bear it." That is not good enough for the sensitive person whose appearance is disfigured by acne, or who is accumulating physical—and mental!—scars that will last a lifetime.

Fortunately, we doctors can offer a great deal better advice than that. First of all, try to discover and eliminate any food that encourages acne. For example, you yourself may know that chocolate is responsible. *Don't* arbitrarily cut out all desserts and fats as they are an important part of the food you eat. Just go easy on rich foods, greasy foods, and chocolate—and search for the other ones which you should avoid entirely because they irritate *your* skin.

Keep the skin, particularly on the areas where acne is most apt to appear, such as the face, chest, and back, very clean. Plain soap and fairly hot water are best. Scrub with a *clean* washcloth, but not so hard you hurt the skin. Follow by a cold rinse. Change towels at least daily. Avoid all creams and greasy lotions. Do not plug the pores with heavy make-up or use "pore-closing" beauty aids. If you have pimples, *don't* squeeze them; I know this will take all your will power. Apply a compress wetted with hot water; this will encourage drainage and healing. Hide the offending spot with *Acnomel cake*, which will also help to heal the pimple. *Acnomel cream* is stronger, and I think it should only be used under a doctor's direction. To get rid of blackheads, soak in warm sudsy water to loosen them, and press gently with a comedone extractor which can be purchased at most drug stores; don't use your fingers. If the blackhead comes out easily, touch the spot with rubbing alcohol (70%). If it doesn't come out, leave it alone for a while.

This is the best way to handle ordinary, mild cases of acne. Severe ones require more complicated treatment, which only a doctor can provide. Just to give you an idea, here is the treatment recommended by an outstanding skin specialist for a patient I felt required the most expert assistance to prevent acne from permanently scarring his face:

"Examination revealed a moderately severe acne vulgaris of the face characterized by a fairly large number of erythematous papules and superficially infected areas. Some superficial scarring was noticed. The complexion appeared not excessively oily.

"I emphasized to Mr. ——— that local treatment of the affected skin was very important and should be carried out persistently. As a rule, however, that was not enough to bring an acne like his fully under control. I therefore recommended a six day course of Aureomycin, 2 gms. a day for 2 days, 1.5 gm. a day for 2 days, and 1 gm. a day for 2 days. This is liable to suppress, at least temporarily, the secondary infection. In addi-

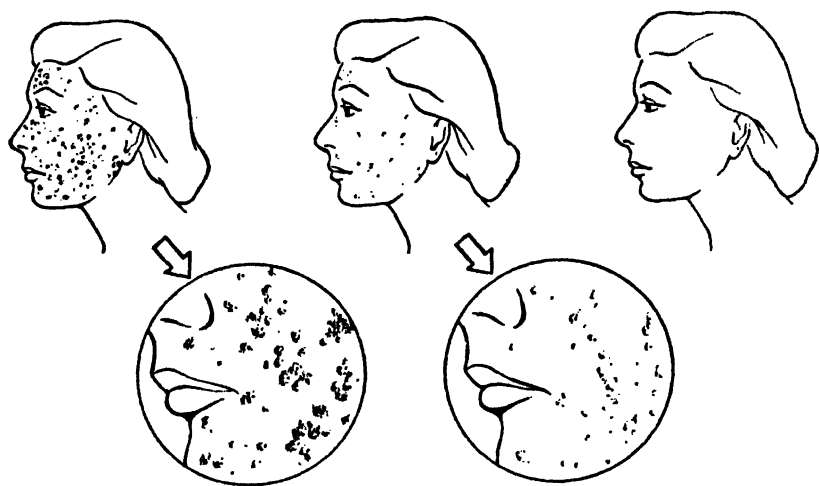


Illustration 6-19. ACNE.

LEFT: Severe case. **CENTER:** Severe case after having healed without treatment, leaving scars. **RIGHT:** Properly treated case; no noticeable scars remain after healing.

tion, I recommended a course of six or seven treatments of x-ray, 75R per treatment to each side of the face. For local treatment I prescribed thorough massages of the face twice a day for five minutes with Thylox soap. A sulfur lotion was prescribed for application at night, and a clear astringent containing boric acid, camphor and alcohol was prescribed for application several times during the day.

"I have suggested to Mr. ——— that he return once a week for his x-ray therapy."

Even if acne *has* scarred your face, medical science can help you. "Planing" with a rotary, high-speed brush is the answer. It consists in removing the outer layer of pitted skin, leaving the portion which contains the glands and hair follicles. New skin, rosy at first and then fading to a normal color, grows in from the bottom up. This technique has also been used successfully in removing some types of birthmarks and disfigurements due to accidents. The so-called "sandpaper surgery," for acne scars is not recommended by most dermatologists.

Remember that "planing" is a *surgical operation* although not a major one. It *must* be performed by a competent doctor, with the same aftercare that follows any operation. *Never* go to a "beauty specialist" for this kind of treatment. In fact, never go to anyone except a doctor, preferably a skin specialist (a *dermatologist*), for acne.

Roseacea (acne roseacea). Despite its name, this condition is quite different from acne. It is popularly known as "whiskey nose," a very unfair name because many people have it who never had a drink in their lives. It is due to a flushing of the blood vessels of the nose and cheeks, and drinking alcohol encourages this nervous reflex. After a time the blood vessels become pronounced and the size of the nose may increase. Even the worst cases can usually be cured by a doctor. In its mild or early stages, the condition can be controlled by frequent application of cold water, witch hazel, or ice, which contract the blood vessels. Pat or rub on gently—do not massage. And, of course, avoid alcohol, and also hot or spicy foods.

ALLERGIES AND SENSITIVITY

In the past, many people used to suffer from rashes and other troublesome skin complaints that refused to yield to treatment; today we know that some of these are due to an allergy (see page 739). People have been familiar for generations with one form of allergy, namely *hives*. These are superficial areas filled with a watery substance, which appear and disappear on the skin, often itching quite badly. They may come out after a certain food has been eaten. *Nettle rash*, *drug rash*, and *urticaria* are other names for similar conditions. However, a great many medicines can cause drug rashes without hives.

Itching caused by allergic reactions can be relieved by applications of calamine lotion or by putting 1 cupful of bicarbonate of soda (baking soda) in the bath water. Of course the best thing to do is to avoid the substance that causes the reaction. Sometimes this is easy. Many of us have been able to discover, by ourselves, that we get hives or "break out" after eating strawberries, taking a certain medicine, putting away winter clothes in moth balls, using a perfumed soap, wearing certain materials, and so on. It isn't hard to discover whether you, like most of us, are affected by poison ivy. However, in a great many cases physicians with special training in these fields (*dermatologists* and *allergists*) have to work like detectives to discover whether the condition is due to an allergy, and if so, which substance is responsible.

Having skin that is sensitive to certain substances differs from being allergic to them. Here is an example: if your hands become sore after repeated use of a strong cleansing agent which doesn't irritate them when you use a weak solution, you are sensitive rather than allergic to it. The allergic person reacts to very small amounts of the materials that give his allergic reactions. Some skin is sensitive to many things, including the rays of the sun that cause sunburn. Tracking down a sensitivity can be difficult, too.

Eczema is a common and troublesome but *not* contagious skin disease of an allergic nature.

EMOTIONAL FACTORS

It can be even more difficult to discover whether emotional factors are responsible for a skin condition, although here, too, some cases are fairly obvious. Perhaps you have known someone who gets a rash on the neck when embarrassed or angry.

There are indications that emotional factors may play a part in psoriasis. Neither this nor eczema can be cured as miraculously as claimed by any patented or advertised remedy, so don't waste any time or money before you see a doctor who, with skill and patience, can usually get good results.

INFECTIONS OF THE SKIN

Because of its exposed position, the skin can be infected by micro-organisms, including **bacteria**, such as those causing *boils* or *impetigo*; **viruses** which cause *fever blisters*; **parasites** which are responsible for *scabies*; **fungi** which cause such diseases as *athlete's foot*; and the germ of syphilis, called the **spirochete**, which causes *syphilitic lesions*.

Boils and **carbuncles** are caused by pus-forming bacteria. These germs are often present on the skin, but are unable to do any damage unless its resistance has been lowered by such things as irritating friction, cuts, poor health, bad nutrition, or diabetes. A carbuncle is more serious than a boil because it is larger, goes deeper, and is accompanied by a general feeling of illness.

Boils and carbuncles respond readily to treatment by a physician who may incise and open them if necessary, and/or use penicillin—in addition to discovering and eliminating their cause. *Anyone suffering from a carbuncle should see a doctor*; so should anyone who has a number of boils or suffers from them repeatedly. They can be serious. Germs from the boil or carbuncle can get into the blood, with grave, or even fatal, consequences. This is particularly true of a boil or carbuncle on the nose or upper lip, because germs in these areas have easy access to the brain.

If you have a small boil which is *not* on the nose or upper lip, it is usually safe for you to try the following:

Wash the boil and the surrounding area with soap and warm water, several times a day, lightly dabbing on 70 per cent alcohol afterward. Cover, not too tightly, with an antiseptic gauze pad to prevent irritation.

In addition, you should apply hot compresses—as warm as you can stand—every hour for 10 minutes at a time. Make these compresses by soaking

an antiseptic gauze pad in hot water containing as much salt as will dissolve in it. This helps relieve pain and encourages the boil to drain. Cover with a fresh, dry pad.

If the boil does not get better within a few days, see a doctor. *Do not* open a boil yourself or let an "amateur surgeon" friend do it.

Impetigo is also caused by bacteria, and is quite contagious especially in infants. It is characterized by yellowish crusts, often on the face, that look as though they had been applied to the skin. A doctor can easily cure impetigo before other infections set in.

Folliculitis is similar to impetigo except that the infection occurs in the hair follicles or the pore openings of the skin. **Barber's itch** is a special case of folliculitis which affects the beard and makes shaving a problem for men afflicted with this frequently very stubborn infection. The medical name for barber's itch is *sycosis vulgaris*. It may take some time to cure even a mild case of folliculitis. You may need one visit to the doctor for instruction in removing the infected hairs.

Fever blisters (*herpes simplex*) are caused by a virus. They usually occur with a fever or cold, and appear around the mouth and nose; or they can follow exposure to sun and wind. Usually they clear up within a week or so. A drying lotion such as 1:500 aluminum acetate in cold water is comforting when applied with bits of cotton. Spirit of camphor is a helpful application in mild cases. Cold cream may help to bring relief during the onset. Troublesome, recurrent fever blisters should be seen by a doctor who may be able to remove the cause, or he may try to immunize you against them.

Shingles (*herpes zoster*) is also caused by a virus which infects part of a nerve, causing an eruption which appears on the skin. People used to say that a patient would die if the shingles completely circled the body, that is, if they "met." This is *absolutely untrue*. There are some potentially dangerous complications from shingles in the eyes and nerves. These should be treated immediately by a doctor.

Athlete's foot has been described on page 147.

The itch (*scabies*) is extremely contagious, but fortunately yields quickly to treatment. Hands, genitals, and folds in the skin are favorite areas for the tiny itch mite to burrow into the skin. However, almost any part of the body may be affected. It is not easy to tell whether or not one has scabies, and a doctor should always be consulted. The remedies used for scabies can aggravate other skin troubles which are sometimes confused with it. A doctor or health officer will tell you how to kill the parasites in bed linen and wearing apparel.

Other parasites include **lice** and "**crabs**" (*pubic lice*), both of which can be quickly eliminated by powders or sprays containing certain chem-

icals—but again, this should be done under a doctor's supervision as these materials are powerful. *Kwell ointment* is extremely effective in getting rid of pubic lice, usually with one application.

GROWTHS

Corns are caused by pressure, and may occasionally appear in places other than the feet (see page 144 for treatment of corns).

Birthmarks include *pigmented moles*, and the *vascular birthmarks* such as "strawberry marks." Never attempt to remove either kind yourself. If they are disfiguring, they can be covered by a cosmetic preparation such as *Covermark*, or, in many cases, removed by a surgical operation. Your doctor may feel it is best to remove moles located on the palms, soles, or genitals. Any mole that starts to grow or bleed should be seen by a physician.

Keloids are tumors that do *not* become malignant. They appear in scars, and should not be cut out as they usually reappear in the new scar tissue. A doctor can remove them with radium or "dry ice." Deposits of fat in the skin cause harmless yellow tumors (**xanthoma**) which can be removed by a physician if they are unsightly.

Keratoses are soft brown spots that appear in middle age; in the aged, they may be hard, in which case it is usually wise to have them examined by your doctor. They may need to be removed as they may turn into cancers.

Warts are caused by a virus. Don't attempt to remove them yourself, for the only satisfactory methods of getting rid of them are not safe unless they are employed by a physician.

Cancer of the skin may be less serious than in any other part of the body because it can be diagnosed and removed early, provided no time is wasted on dangerous home "treatment." Always make certain that any new or changing growth or lesion—a lump, ulcer, or wart—is harmless by consulting a physician, rather than by "waiting to see." (See Cancer, page 626.)

OTHER SKIN DISEASES

Syphilis may be the cause of any sore which appears on the genital regions, between three days to three months after sexual intercourse with an infected person. It may manifest itself again about six weeks later in the form of a rash resembling *measles*, accompanied by symptoms somewhat like those of a cold. Although it is not true, as some people believe, that a great many skin diseases are caused by syphilis, there is no time to waste before starting treatment if a sore should be a *venereal skin lesion* or a rash should be caused by this disease. *Be sure to consult a*

doctor immediately because he can cure this disease immediately—or set your mind at ease by taking a test that will prove you do not have it. Syphilis does not cause pimples and itching. (See page 650 for complete description of syphilis.)

Erysipelas (St. Anthony's fire) is a streptococcus infection of the skin and underlying tissues. It must be treated by a doctor who can cure it with medicines.

Glanders, anthrax, and tularemia are serious ailments contracted from animals suffering from these diseases. Skin lesions can be important symptoms.

Rashes can be caused by a number of contagious diseases such as *smallpox, meningitis, measles*, and many of the *common diseases of childhood*. Although I discuss these elsewhere, I want to impress on you the fact that *any rash or abnormal skin condition accompanied by a fever or a general feeling of illness is a danger signal*. If there is no fever, the rash may be due to an *allergy* or a toxic reaction to some chemical (see page 739 and page 192).

Lupus erythematosus, pemphigus, and scleroderma are potentially dangerous skin diseases. *Lupus erythematosus* is characterized by a red eruption of the nose and cheek, which takes the shape of a butterfly. It may follow exposure to sun. This disease frequently remains in its mild form especially if the patient follows the physician's recommendations. *Pemphigus* usually begins as a *number* of blisters usually starting around the nose and mouth and gradually involving the rest of the body. *Scleroderma*, a hardening of the skin, is usually preceded by changes in the circulation of the skin, especially in the hands and feet, which become cold and bluish. Although these diseases are rare, I mention them in order to remind you that the skin is an important organ of the body, which can be affected by more than minor ailments!

NEVER NEGLECT A SKIN DISEASE

It is important to remember that, in addition to the serious diseases mentioned above, a skin condition can indicate the presence of a deep-seated disease of the lungs, liver, heart, and many other organs of the body, including the *endocrine glands*. It can also indicate general poor health or a *vitamin deficiency*. There are literally hundreds of skin ailments. You can't possibly learn them all. Some of them are difficult to identify. For this reason, and because their significance varies tremendously, it is necessary to consult a doctor. You can see how important it is to discover, for example, whether a rash is due to prickly heat or to a contagious disease.

Always consult a doctor if anything unusual happens to your skin.

FINGERNAILS

These horny growths of skin cells also reflect your general health; the "white spots" that sometimes appear do not, as some people believe, indicate sickness. If your nails are *very* dry and brittle you may need medical attention. Your nails need little care. In fact, most infections such as *abscesses*, *whitlows*, *paronychias*, or "*runarounds*" are usually caused by too much manicuring of the cuticle. Push it back gently. Do not use a sharp instrument for this, or for cleaning your nails. Dryness encourages hangnails, and plain oil or a handcream will help to correct this tendency. A hangnail will heal over in a few days if protected by a Band-aid. Any nail polish you fancy is safe to use provided it does not cause irritation due to an allergy or sensitivity. Always try out a new one on a single nail at bedtime and make certain it is safe to use on your other fingers in the morning.

HAIR AND SCALP

Like fingernails, hair is an epidermal growth. It, too, reflects the general condition of your body. For example, an underactive thyroid gland can cause dry, coarse hair.

CARE OF THE HAIR

Keep your hair clean. Wash it no less than every ten days, more often if it tends to be oily. A pure plain toilet soap is the best, melted in a little water if you find it easier to use in liquid form. Good shampoos usually contain nothing more than soap or detergent, along with some perfume to which you may happen to be allergic. Poor shampoos contain borax or an alkali that is usually irritating to the scalp. Washing removes the natural oil in your hair, along with the dirt, and *no* shampoo I have heard of actually lives up to its claim that it restores these oils while washing your hair. For oily hair a tincture of green soap such as Fitch's is satisfactory. For dry hair, a castile shampoo such as Laco is good. Don't forget to wash your comb and brush at least as often as you do your hair.

Rinse your hair carefully after washing. If you have "hard" water, the soap you use is apt to leave a deposit on your hair. Some hard water can be softened by boiling, and in other cases distilling it is necessary—and a nuisance. Perhaps you will want to use a soapless detergent if you have only very hard water and soap doesn't rinse off properly. Do not rub your hair too hard while drying it. Sunlight or a hair-dryer that blows air on

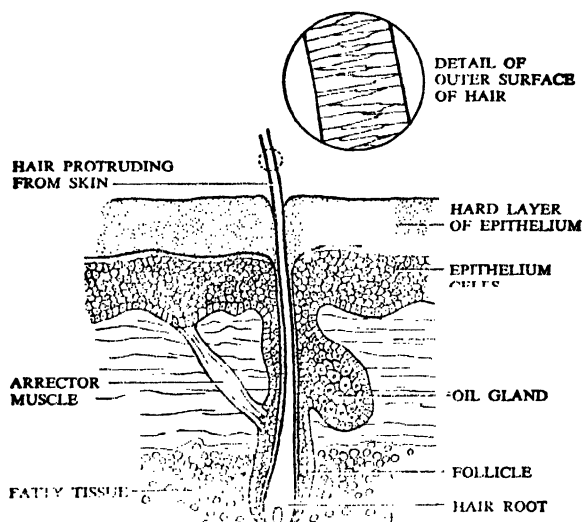


Illustration 6-20. HAIR AND FOLLICLE.

the hair is good. So is brushing it gently as it dries. A little massage is helpful. Don't be drastic about it, though; just press the scalp with your fingers and move it about a little to stimulate the fatty tissue under the scalp. Do this once a day. The one hundred daily strokes with a hair brush which our grandparents used to swear by is excellent for the hair, making it look sleek and glossy, and stimulating the sebaceous glands that supply the natural oil.

If your hair is dry, rub in a little pure olive oil or other oil after shampooing, or more often if necessary. Lanolin has been very much overrated; it won't work magic for your hair. Brilliantines and similar pomades are usually made of mineral oil and keep the hair in place, but that is all they do. Sometimes these pomades are so heavy they clog the gland openings, and they may contain irritating substances. It is best to avoid them. If your hair is oily after shampooing, a little alcohol, *quickly rubbed off* (don't leave it on to evaporate) will correct this condition. Do not wet your hair repeatedly to keep it in place; your hair-brush will do this better without drying your hair.

Your hair does *not* need singeing, which you may have been told "seals up the ends of your hair, keeping in the oil, coloring and other vital fluids." It does not do this. Sunlight, while good for your hair in moderation, will not make it grow. Nor will cutting it off or shaving it increase its rate of growth. Keeping it clean and brushed is the best thing you can do for it.

DANDRUFF

Dandruff is very common and troublesome. In this condition, the outer layer of the scalp peels off in little white scales. Usually these flakes eventually become larger, greasy, and yellowish if the dandruff persists. They may block the openings of the sebaceous glands so that the hair becomes dry. More often, dandruff is associated with an increase of the activity of these grease glands, so that the hair becomes oily. This latter condition is called **oily seborrhea**. The scalp condition may be associated with greasy patches of skin on the face, neck, and body.

Dandruff is caused by a combination of factors, including lowered resistance due to a generally poor physical condition or nervous tension, possibly an infecting germ, and lack of absolute cleanliness.

You can best clear up dandruff on your own by paying attention to the general care of your body, the food you eat, and so on. Keep your hair and scalp scrupulously clean by shampooing every few days, and your comb and brush even cleaner. A moderate amount of exposure to sunlight is helpful. For mild cases, use the following lotion, which your druggist may have in stock, or your doctor can prescribe.

Mercuric bichloride 0.26 gram
 Euresol 8.0 cc
 Spirit of formic acid 30.0 cc
 Castor oil 8.0 cc
 Alcohol sufficient to make 240 cc

Apply twice or three times each week, rubbing into scalp. If your hair is thick, ask the druggist to show you how to work it into the scalp by applying it with a medicine dropper. Protect the eyes.

For persistent dandruff, massage a small amount of one of the following ointments *into the scalp* at night, and remove the next day by shampooing. Use only a small amount so that the ointment will not stick to the hair and be difficult to remove.

Pragmatar (Smith, Kline & French Co., Manufacturers), or

Sulfur 2 grams
 Salicylic acid 2 grams
 Water 10 grams
 Aquaphor sufficient to make 30 grams

Oily dandruff is harder to clear up. Apply a pure oil such as olive oil a short time before shampooing, in order to loosen the scales. Add a drop

or two (no more!) of ammonia to the rinse water, and rub a little vegetable or mineral oil onto the scalp afterwards.

Of course, great care is needed to prevent reinfecting yourself with your comb or brush. Be sure that any beauty parlor or barber shop you visit uses only sterilized combs and brushes, and observes sanitary methods.

Almost every type of dandruff, including the severe cases, accompanied by itching, scaling, crusts, or inflammation (seborrheic dermatitis), will *improve* when treated with the new preparation, **Selsun**, containing **selenium sulfide**. It has been approved by the Council on Pharmacy and Chemistry of the American Medical Association, but you must have a prescription to buy it. I know of no preparation that will actually *cure* dandruff. The main value of these substances lies in the fact that they (1) keep the dandruff under control and (2) make you wash and brush your hair regularly!

GRAY HAIR.

The *color* of hair is due to pigment. *Gray hair* is caused by the fact that, for some reason not completely understood, air spaces form in the hair shaft. This usually takes place in middle age, although it can occur prematurely; it does not, however, happen overnight, as the old stories would have us believe, although illness has been known to cause rapid onset of grayness. As yet there is no indication that vitamins or anything else will prevent graying, or will darken hair that has turned gray.

BLEACHING HAIR

Hair can be bleached by ordinary hydrogen peroxide to which a drop of ammonia has been added. Sodium perborate bleaches can be harmful, and all bleaching tends to alter the texture of the hair. Personally, I am not enthusiastic about bleaching because the new hairs, and the new portions of hair around the roots, grow in with their original color.

HAIR DYES

Hair can also be dyed or tinted. I know of *no completely safe hair dye* that will give your hair a *permanent, natural color*. If you wish to have your hair dyed, be sure to have a small lock tested first to find out whether the dye will irritate your scalp or cause a general illness. Some people have been made seriously ill by hair dye. Always repeat the test process each time you have your hair redyed because you can *develop* a sensitivity. Henna is safe but produces only reddish tones, and

it may make the hair brittle. The "rinses" and "tints" such as you can buy in a reliable store are satisfactory. The U.S. Food and Drug Administration certifies many of them as harmless. Although they do not wash off if your hair gets wet, shampooing will remove them—but isn't that an advantage in case you change your mind or decide you like your hair after it has turned completely gray? Remember, too, that in many cases, white hair makes a person look younger rather than older.

Never dye your eyelashes or eyebrows because the skin about them, and your eyes themselves, are extremely sensitive. There have been cases of blindness resulting from attempts to dye eyelashes. A temporary darkener like mascara is relatively safe, but even that sometimes produces irritation.

PERMANENT WAVES

Whether your hair is curly or straight depends on its structure, so of course you can't change it *permanently*, since it will grow back in its original form. However, hair is pliable, and it can be stretched and made curly (or frizzy) by a hot iron or hair curlers. Too much heat dries it out, or scorches it, and makes it frizzy. Hair that is kinky or too curly can be stretched and straightened out.

How safe are permanents? The process depends upon the action of chemicals which make the hair more pliable, so that it takes the shape of the curler, and a "neutralizing" chemical that makes it hold its new shape. These chemicals probably do a *little* harm, at least, to the hair, but this isn't important as hair grows fairly regularly under ordinary circumstances. Far more important is the fact that many people become allergic or sensitive to these chemicals. *Always* have a "test curl" made first, to be certain you will not suffer a reaction which may be severe. Great care should be taken to keep the waving lotions from the eyes and any cuts or sores, and to remove them promptly if they do touch any sensitive areas. Too strong a solution of the chemical can injure the hair, so it is important to make certain your beauty parlor operator knows her business. Don't have permanents more often than essential. Bleached and dyed hair is particularly sensitive. Almost all permanent-wave lotions are basically alike, but the skill with which they are applied varies with the individual operator.

Home permanents contain much the same ingredients as those used in beauty parlors. However, there is a greater danger since you or the friend who gives you the permanent usually neglects to make a test curl; and you are more apt to be careless about keeping the lotion from your eyes and face—and from the children. All these lotions are dangerous, so be sure not to grow careless even if you have had no trouble with them

in the past. Read the directions carefully. The American Medical Association, while recognizing these dangers, feels that home-permanent kits are safe for normal use.

Non-neutralizing home-permanent kits depend for their neutralizing action on the oxidation that normally occurs when the waving lotion is exposed to air as it dries. So far there is no indication that this can cause any more damage to the hair than would occur if a neutralizer were used, but it may not produce so long-lasting a wave.

BALDNESS

The time and money women waste on useless "hormone" creams and other beauty aids can probably be matched by that which men spend on "cures" for baldness. I am sorry to have to tell you that there is *no* cure for ordinary baldness. The miraculous ones you read or hear about have nothing to do with this type of baldness. For example, in *alopecia areata*, the hair suddenly falls out (often in patches); this disease is not fully understood, but appears to be connected with tension or other emotional factors. In many cases the hair will grow back again after the illness has subsided, and if the sufferer has been using a "hair restorer" he will sign testimonials crediting it with his new growth of hair.

Hair normally grows in "spells," a period of growth alternating with a rest period. On the head, its rate is usually about $\frac{3}{4}$ of an inch a month, although this varies in different people. If not cut, it grows to the length of about 25 inches, on an average. Hairs fall out—again the rate is different in different people—and new ones grow from the same follicles.

Baldness can be caused by general ill-health, infections of the scalp, nervous tension, and *temporarily* by a disease such as typhoid fever. Last, but by no means least, it can be due to the combination of sex, age, and inheritance which results in what doctors call "*male pattern alopecia*," which simply means the ordinary baldness of men.

Frankly, we do not fully understand the factors that go into this condition. We know that the tendency to become bald runs in certain families, and that certain racial groups are more susceptible to it than others. We know that it is often associated with aging, perhaps because the layer of fat between the scalp and the skull tends to disappear, in men, with advancing years. We know that the male sex hormone has something to do with it, as it has with the growth of body hair. In this connection, I want to warn you *never* to take or use any preparation that has hormones in it, or is supposed to stop the action of a hormone. If the preparation so advertised actually has such an effect, it can be extremely dangerous to your endocrine glands.

There are some things you can do to stave off ordinary baldness. You

can avoid lotions, tonics, too much wetting, and continued dandruff. You can protect the general health of your body, and give your hair proper attention and care. However, you can't cure baldness after it has arrived. If it is particularly distressing to you because of your business or profession—or for personal reasons—I strongly advise you not to waste money on hair "restorers" but to spend it on a toupee which in many cases cannot be distinguished from your own hair.

OTHER SCALP AND HAIR CONDITIONS

The scalp and hair can be affected by many of the conditions which afflict other parts of the skin. Protect your head from irritating chemicals whenever it is necessary. Never remove wens or growths of any kind. These require the attention of a doctor.

Children frequently pick up *head lice* (pediculosis capitis), the eggs of which are called *nits*. There are many time-honored methods of getting rid of them, including the laborious use of the fine-tooth comb. However, the new medicines are so effective that it is well worth your while to get a doctor to prescribe one, and also give you directions for using it safely. Great care should be taken to avoid reinfection, by keeping the comb and brush absolutely clean by boiling or dipping in alcohol. This is also true of *ringworm*, a fungus infection of the scalp, to which children are quite susceptible. A doctor can cure this condition without much difficulty *after* he has determined exactly which fungus is causing it.

Remember that scalp infections can become serious, causing swollen glands and even blood poisoning. They can usually be avoided by taking the proper care of your scalp and hair, but if infection does occur, be sure to see a doctor.

CHAPTER 7

Keeping the Germs Away

IF YOU had to choose between them, whom would you pick as a roommate, a leper or a person with tuberculosis? Ten to one you'd choose the person with t.b. Yet, tuberculosis is *by far* more readily acquired than leprosy.

Less than a hundred years ago tuberculosis (which was then called consumption) was not known to be contagious—doctors said it was due to an inherited “weakness of the constitution”—while they believed leprosy could be contracted simply by touching a leper's garment. At that time it was also believed that malaria came from breathing night air with its dangerous vapors or miasmas, that an epidemic of diphtheria would follow if locusts were prevalent, and that dysentery was due to becoming overheated.

Today we know the cause of germ diseases, how they are transmitted, and how a great many of them can be prevented, avoided, or cured. There are more than a hundred contagious diseases to which you may be exposed during your lifetime. It would be far too big a task for you to learn the details of the cause, transmission, prevention, and cure of each of them. Even doctors don't know the exact manner in which *every* germ is transmitted.

However, there are only a *few* ways in which germ diseases can be contracted. By learning about them, you will be able to protect yourself and your family. Unfortunately, you won't be 100 per cent successful. The chances are that everyone will contract at least one disease during his lifetime, if only a cold. That is why I describe a number of the common diseases, their symptoms and treatment, in other chapters. But even though reading this chapter won't guarantee you complete protection, it will enable you to avoid many communicable diseases.

The following letter provides an excellent illustration of what I mean.

Dear Doctor,

I just heard something that makes me feel like writing you because I thought some mean things about you at the time, but now I'm glad you told mother to do what she did. You remember a couple of years ago when we

spent the summer on grandfather's farm. You said not to let us drink any milk unless it was boiled because we might catch something. Well, Janie didn't mind because she was still a baby but it was rough for me with grandpa saying why make so much fuss do you want him to be a sissy, and everybody else drinking it plain which tastes much better. Well I went to camp last summer so naturally I didn't go to the farm but mother got a letter and in it grandpa said Slim Watson, he's this fellow who worked for them, he's sick. He's in High School and on the football team. It turns out he has a disease called undulant fever, if that isn't how you spell it you know what I mean. I guess it's bad alright. He can't play football or anything. Mother said wasn't I glad I didn't have it and I could thank you and so I thought I would.

Very sincerely,
Your friend Rick (Richard)

As you have probably guessed, Rick meant *undulant fever* (also called Malta fever, brucellosis and abortus fever). Because his mother insisted that his milk should be boiled (the milk on his grandfather's farm was not pasteurized) she protected him against this quite serious disease, which I describe on page 717. It is only one of many communicable diseases that you can learn how to avoid by reading this chapter.

GERM DISEASES

Communicable diseases are caused by germs—unlike, for example, the diseases I discuss in Chapter 5, which are caused by disorders of the endocrine glands. The words *communicable*, *contagious*, and *infectious* are used more or less interchangeably, although doctors do distinguish between them. We usually refer to the entire group as *communicable diseases*. The ones that children speak of as “catching diseases” we say are *contagious*, which means that they are transmitted by contact with a sick person, either directly or indirectly (for example, through the air into which he has sneezed or coughed). By *infectious* we mean diseases like lockjaw (tetanus) which aren't “caught” from a sick person, although they, too, are caused by infecting germs. However, since many diseases are both contagious and infectious, there is not much distinction made between the two terms.

WHAT ARE GERMS?

Medically speaking, a germ is a microorganism, especially one likely to cause disease. Although we naturally concentrate on the fact that

they cause diseases, germs also perform many useful functions. Without them, there would be no wine, beer, cheese, or bread; and nothing would decay in the soil—with consequences it is difficult even to imagine!

Micro means small; germs are also known as *microbes*. Germs vary in many ways, and some of them are, comparatively speaking, very much larger than others; but they are all tiny. It was because of their size that scientists formerly ignored them. Even after doctors were able to see germs under their microscopes, they dismissed them as too little to amount to anything. It was not until 1865 that the French chemist, Louis Pasteur, discovered their importance. He proved that, although one germ by itself doesn't amount to much, these tiny organisms multiply rapidly under certain conditions, and produce definite effects upon the "soil" in which they are growing—"soil" which may be a bottle of wine, or the body of a human being.

It seems hard to realize that less than a hundred years ago doctors didn't even suspect that germs have anything to do with wound infections or diseases. Now we know a tremendous amount about them: their various types and habits, the way they enter the body, how the body fights them, and how it can be helped in this battle.

BACTERIA, PROTOZOA, VIRUSES, PARASITES, AND FUNGI

There are five types of microorganisms that cause communicable diseases. Knowing something about them will make it easier for you to stay healthy. (See Illustration 7-1.)

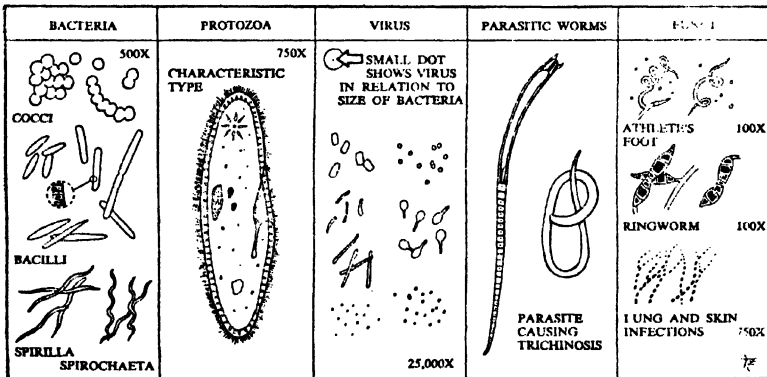


Illustration 7-1. BASIC TYPES OF MICROORGANISMS.

BACTERIA

Bacteria are very tiny forms of life visible only under a microscope. To give you a rough idea of their size, imagine all the 8 million people in the city of New York reduced to the size of bacteria. They would fit very comfortably into a drop of water!

Among themselves, the sizes, shapes, and habits of bacteria differ from one to another. Some swim about, others remain still. Some bacteria are little individualists, preferring to go it alone. The streptococci form chains like strings of beads, while others such as the ones found in boils live in clusters, like a bunch of grapes.

Luckily, most bacteria, which are all around us, are more beneficial than harmful to mankind. Bacteria are very important in destroying dead matter. You might say that they are our most efficient department for garbage disposal. Bacteria help the growth of certain plants on which all other plants and animals depend. In fact, life without bacteria would not be possible. Yet how pleasant it would be without the bacteria that cause tuberculosis (page 637), pneumonia (page 642), syphilis (page 650) and diphtheria (page 425), to name just a few!

VIRUSES

These organisms are much smaller than bacteria, so tiny they cannot even be seen through an ordinary microscope but require a special apparatus, the electron microscope. Another reason they are harder to study is that, unlike bacteria, they are extremely fussy about where they grow, normally refusing to have anything to do with laboratory "food." It is only quite recently, and with the greatest of difficulty, that scientists have succeeded in working out ways of getting them to grow anywhere except in an animal body. Fussy as they are, they are extremely potent; very small numbers can start a disease. Some are very hardy. They cause a great many diseases, including polio (page 680), yellow fever (page 182), influenza (page 701), infectious hepatitis (page 646), rabies (page 182), smallpox (page 174), and such children's diseases as chicken pox, measles and mumps (Chapter 20). The common cold (page 734), which affects just about everyone, is also caused by a virus.

PROTOZOA

These are microscopic creatures which may be fifty times larger than bacteria, but still cannot be seen without a microscope. Important diseases caused by these organisms are *malaria* and *amebic dysentery* (see pages 721 and 722).

PARASITIC WORMS

Some of these parasites can be readily seen by the unaided eye, while others are so small they cannot be identified exactly without a microscope. The smallest are the size of a pinhead, while a tapeworm can grow to a length of 30 feet.

Many of these parasites, including the *flukes* (one of the two types of *flatworms*) are more prevalent in other countries, especially the tropics, than they are in the United States. The other type of flatworm, the *tapeworm*, is found in this country, and is taken into the body by eating beef, pork, and fish containing this parasite. Inside the intestine, the tapeworm attaches itself to the intestinal wall and proceeds to grow. Some *roundworms* are also common in this country, especially in the South. They include the *pinworm*, the *intestinal roundworm*, and the *hookworm* (page 430). Another roundworm which is found in pork causes *trichinosis* (page 181), a disease in which the parasites eventually get into the patient's muscles.

FUNGI

These growths are related to mushrooms, only they are very much smaller. The green or white mold which forms on stale bread is a tiny fungus. A fungus causes athlete's foot (page 147). Other types of fungi are responsible for various skin diseases. There are many fungus diseases, most of which are fortunately rare in this country.

HOW THE BODY FIGHTS GERMS

"With all these unsuspected sources of disease around, it's a wonder that people managed to stay alive at all!" you may be saying.

In the past a tremendous number of people used to die annually from germ diseases. Less than a hundred years ago every fifth child died before reaching its first birthday, and almost as many more before reaching the age of two, the majority of them from dysentery and "childhood diseases." Epidemics of diphtheria were known to kill every child under twelve in an entire town, while plagues of smallpox, yellow fever, and other diseases would decimate the population. Until doctors learned about germs, there wasn't much they could do to help people prevent these diseases.

Fortunately, however, the body is not helpless against germs. It has filters, such as the tiny hairs in the nose, to keep them out, and secretions, such as the tears, to kill them or wash them away. If they do get in.

the leucocytes (white blood cells) attack and devour them. The number of leucocytes in the blood increases rapidly when they are needed to fight infections. The fever usually caused by these diseases can help the body to destroy some germs which are unable to grow at a temperature much above normal (98.6° F.).

The body has still other resources. It manufactures substances which, in a sense, counteract the germs and render their poisons (toxins) harmless. These substances are called antibodies or antitoxins. After the body has won its battle against certain diseases, these substances remain in the blood and prevent the germs of that disease from getting a foothold again. This is what happens when you have measles, chicken pox, or any of the other diseases which people don't get more than once. We say that such people have become immune to the disease; this is called an *acquired immunity*. Many of us are immune to one or more forms of polio (infantile paralysis) because we have had an attack that was so mild we didn't even know we had it, usually mistaking it for the flu. Some types of immunity can be passed from a mother to her children. People who are immune to a disease without ever having had it are referred to as having a *natural immunity*. Many immunities are *partial* or *temporary*; that is, they don't *completely* protect an individual *during his entire lifetime*.

HOW DOCTORS HELP IN THIS FIGHT

Doctors know how to make use of the fact that a mild attack of certain diseases prevents the illness from recurring. For example, vaccination has all but eliminated the terrible plague, smallpox. The doctor makes a tiny scratch on the person he is vaccinating, and applies some weak germs of a harmless disease called cowpox; the blood promptly creates antibodies which protect it against cowpox *and* smallpox for a number of years. (See Illustration 7-2, page 175.) Introducing material that has been rendered harmless to the body but will cause it to create a resistance to certain germs, is the principle involved in inoculations against many diseases.

The immunity acquired in this way is called an *active immunity*; the individual himself has made the substances that will protect him from the disease. When we speak of *passive immunity* we mean the immunity developed when an individual receives an injection of "antidotes" which have been created in the body of another person, or an animal. Passive immunity usually doesn't last very long. *Booster shots* are given to revive an immunity, e.g. tetanus immunization. We might say that they cause the body to recollect the method by which it produced an immunity when the original injection was given.

Everyone *can* and *should* be immunized against the following danger-

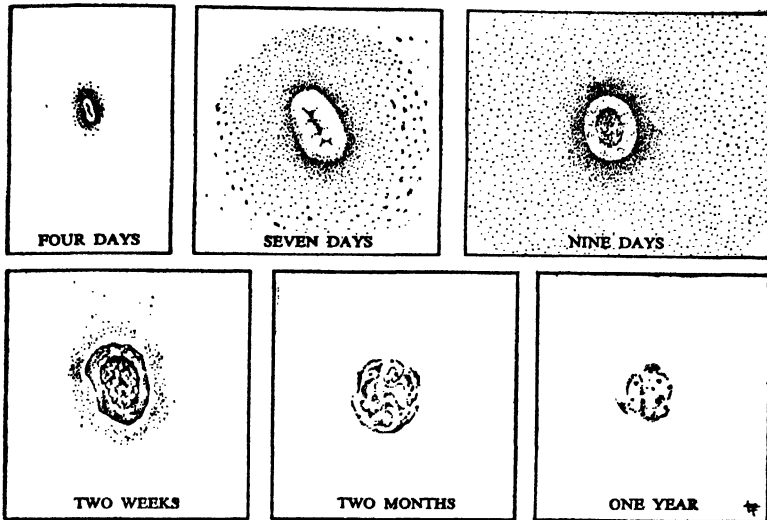


Illustration 7-2. REACTIONS FROM SMALLPOX VACCINATION.

Approximately life size. The shaded areas indicate inflammation.

ous diseases: *smallpox*, *diphtheria*, *tetanus*; and sometimes *typhoid fever* and (in the case of children) *whooping cough*. The inoculations are easily obtainable and cause practically no discomfort. Your family doctor or pediatrician can give you these injections. They are also available free, or at very little cost, so lack of money must not keep anyone from being immunized. Any hospital, public health department, court, or health officer can give you information on this matter.

It is particularly important to protect children against these diseases, which are extremely dangerous to them. Diphtheria used to be one of the main causes of death in children, and whooping cough has a high mortality in infants, so don't put off having your child immunized because he is so little!

Be sure to follow this program carefully:

Calendar for Immunization

Before 6 months of age	smallpox vaccination
Between 6 months and 9 months	diphtheria, whooping cough, tetanus inoculations
Before 1 year	typhoid fever inoculations (for children in rural areas or where the water supply is doubtful)

Vaccination against smallpox should be repeated every five to seven years until there have been three successful vaccinations; after that, whenever there is a danger of exposure to smallpox.

I strongly advise adults who have not had the above inoculations to do so as soon as it is convenient. While being inoculated against tetanus and typhoid fever is not *essential* under all circumstances, why not have it done to be on the safe side? (See page 215.) Other diseases against which adults as well as children should be immunized under special circumstances are: *yellow fever* (see page 182), *tularemia* (see page 181) and *tick fever* (*Rocky Mountain spotted fever*, page 182). Because of the effectiveness of the "wonder drugs" in curing this spotted fever, some doctors consider immunization unnecessary, but I think it is worth while if you live in or visit a place where it is prevalent.

If your children are between the ages of six months and five years, and have been exposed to measles, your doctor may recommend an injection which will keep them from getting the disease or make certain their attack is a mild one. If they don't catch the measles, the immunity will wear off in about three weeks; if they contract a mild case, they will be permanently immune. Since measles isn't dangerous in *healthy* children over five years old, I don't consider it necessary for them to have any special protection against it.

Your doctor or board of health will tell you when to be vaccinated against *poliomyelitis* (infantile paralysis), which I discuss on page 680. It will undoubtedly be some time before we know just how complete an immunity the inoculation will give, and for how long a period of time. Your doctor will be able to obtain the latest information, and advise you accordingly.

As I tell you in the chapter on Pregnancy and Childbirth (page 332), I feel that a woman who is exposed to *German measles* during the third to sixth month of her pregnancy should have an injection to protect her against this disease. Aside from its possible effect on an unborn baby, German measles is harmless, and so I urge parents not to try to keep their little girls from getting it. If they are healthy, it's best to "get it over with" so they will have some immunity before they reach the childbearing age.

At the moment, there are no inoculations that offer complete protection against the common cold, some strains of influenza, and some forms of pneumonia.

OTHER PROTECTIONS

Immunization will protect you from developing certain diseases even *after the germs have gained a foothold in your body*. For example, *rabies*

and *tetanus germs* can be conquered by injections given between the time they start to grow and the time they cause symptoms of illness. But remember—the time is short, so never delay in getting treatment if you have any reason to suspect these germs have entered your body.

Injections will help the body to win its battle against certain diseases *even after the illness is under way*. For example, in *diphtheria* the anti-toxin can be injected to neutralize the toxic effect of the germs (page 425).

A few types of germs can be destroyed by chemical substances which will kill them without injuring the other tissues of the body. Among these chemicals are quinine which attacks malaria germs, a compound of arsenic which strikes at the germ causing syphilis, and the sulfa drugs which destroy several kinds of germs. The “wonder drugs” or *antibiotics*, such as penicillin, act in a slightly different manner: they make it impossible for certain very dangerous germs to grow; they rapidly weaken and are overcome by the resistance of the body to microbes.

I explain which, if any, of these methods is effective in my descriptions of the various diseases. At this point, I just want to emphasize the fact that they may save your life or that of someone in your family. It has been my sad experience, as a doctor, to see people die needlessly because they “didn’t want to bother” with an injection or medicine, or because they “didn’t like the idea” of having themselves or their children “stuck by a needle.”

Although you can be immunized against many diseases, and saved from the disastrous effects of others by injections and drugs, the best protection of all is to keep germs from getting into your body. In order to do this, you should learn the ways in which they can enter.

HOW GERMS GET INTO YOUR BODY

Your body has an excellent coat of armor in the skin which keeps out germs. But cuts or other breaks in it, and openings such as the nose and mouth, provide opportunities for them to enter.

NOSE, THROAT, AND LUNGS

Many bacteria and viruses are spread and taken into the body through the nose and throat. Most germs thrive in moisture, and spitting, coughing, and sneezing keep them circulating. Motion pictures show that a sneeze is composed of tiny droplets, and that when you sneeze, you may expel a spray of liquid to a distance of several feet. (See Illustration 7-3, page 178.) Such diseases as the common cold, pneumonia, tuberculosis,

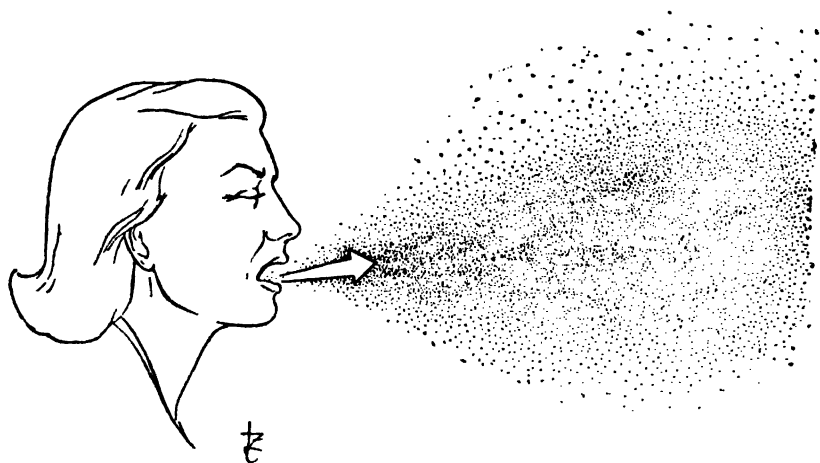


Illustration 7-3. HOW GERMS ARE SPREAD BY A SNEEZE.

whooping cough, scarlet fever, diphtheria, influenza, and meningitis are spread this way. These illnesses are circulated by diseased people, by people who are "coming down" with a disease, or by carriers of the germs who harbor them without being sick.

It is not etiquette alone that demands that you cover your nose and mouth when you cough or sneeze. The germs that are lodged in your nose and throat relish this free ride and the opportunity to spread and multiply. You should never spit in public or put into your mouth pencils or anything that other people handle. As much as you can, avoid crowds during the "sniffle" season or during an epidemic.

More people than you would guess have tuberculosis, which is one of the most serious diseases you can get by inhaling germs. *Any cough that lasts more than six weeks calls for a chest x-ray.* In fact, everybody should have periodic chest films to exclude tuberculosis—as advised in the section on the periodic medical checkups (page 541). *Tuberculosis does not always reveal itself with outward signs. A healthy-looking, robust person may have it.* (See page 639.)

Sore throats, colds, and coughs should be treated with bed rest and plenty of fluids until they are cured. Prompt treatment of colds is necessary for the prevention of more serious diseases which are caused by viruses. Colds offer many bacteria, especially streptococci and pneumococci, a chance to get a foothold and infect your body with more dangerous diseases. See page 736 on the treatment of colds.

It is best to stay in bed until you are well and the fever is gone. Too many people with a contagious disease get out of bed too soon; they are

so bored and so eager to get out and going that they immediately infect those trusting friends and relatives who no longer avoid them.

Nursing mothers with colds should ask the doctor about wearing a nose-and-mouth mask when handling the baby. And no kissing while sick with strep sort throats, pneumonia, etc.! No love is strong enough to withstand these virulent infections.

INFECTION FROM FOOD AND WATER

Typhoid, now fortunately an uncommon disease, is typical of the infections that can enter through the mouth. Other diseases of this group include **amoebic dysentery** and **dysentery** caused by bacteria.

Typhoid germs are found in food, milk, and water that has been contaminated by feces. Flies that have fed on body eliminations may also carry the typhoid germs to food and drinks. Every precaution should be taken to keep food, especially warm food, from being exposed to flies. Plastic covers for dishes are plentiful and cheap.

Habits of cleanliness should be encouraged by all members of the family. Washing your hands after going to the toilet and before eating should be a habit as automatic as breathing. This stress on cleanliness has a good purpose, since contamination can be spread by a person who is not himself ill, as in the case of the typhoid carrier. The famous story of Typhoid Mary is an example of this. Mary, a carrier of the disease, was a cook who went from job to job spreading infection to more than 100 victims.

While we may occasionally be at the mercy of such a person, we can accomplish a great deal by our own precautions. All the **milk** that comes to your table should be pasteurized. *Pasteurization* is the process of heating milk for 30 minutes at 142° F., or at 160° F. for one minute. You can do your own home "pasteurization" whenever in doubt about the milk by boiling it for three minutes. Another method of home sterilization is scalding the milk for half an hour in a double boiler. The milk should be 150° F. by a cooking thermometer for a half hour. At this temperature the milk simmers—there are small bubbles around the edge of the pan.

Certified milk is *not* safe because the certification of the health of cattle is not foolproof; also, certified milk is handled before it is bottled. Of course, all milk is handled at the time cows are milked. But pasteurized milk goes directly after the heat process into sterilized bottles without being touched by human hands. Never drink raw milk, because the cow or the people who work with the milk may transmit disease. Smart farmers always drink pasteurized milk. Unpasteurized milk may carry not only

typhoid, which is now rare, but also tuberculosis, streptococcus infection, brucellosis, and other diseases.

In most cities the **water** that comes from the faucet is safe to drink. But if you live in the country or are going there on vacation, be careful about the drinking water. Water drawn from wells, or taken from lakes, ponds, or rivers may contain dangerous germs, no matter how clear it

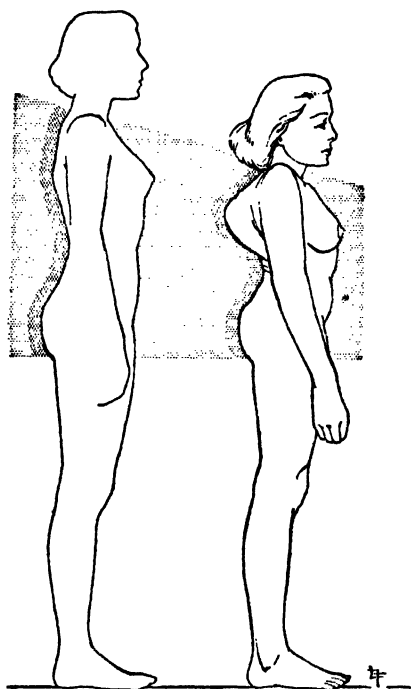


Illustration 7-4. POTT'S DISEASE.

This spinal curvature, caused by tuberculosis of the vertebrae, is one of the diseases which may result from drinking unpasteurized milk.

looks. To be on the safe side, boil the water for 10 minutes before drinking it.

Amoebic dysentery, as well as dysentery caused by bacteria, is spread very much like typhoid. Dysentery is a disease more common than typhoid, because these germs can live for longer periods outside the body. Typhoid and cholera germs have a very short life span when they are not within the body. Cholera does not exist in the United States, and, thanks to modern sanitation methods, typhoid has been greatly reduced.

In India, where people both bathe and eliminate their feces in the Ganges river, cholera has been very common.

Meats can carry disease. Some uncooked pork may contain the living parasite causing trichinosis. For complete protection, *pork should always be cooked thoroughly*. Any pinkness means that it is underdone. For roast pork, an hour to the pound at 350° F. is safe. Brucellosis (undulant fever) may be acquired from pork, beef, milk that has not been pasteurized, and also cheese and ice cream made from unpasteurized milk. *Raw fish and raw beef may contain tapeworms*. Although the U. S. Department of Agriculture inspects meats, you cannot always be certain they are still pure by the time they reach your dinner table. Thorough cooking of all meats and fish is the best preventive. In the tropics and in the Orient, due to poorer sanitation and health measures, many parasitic diseases are very prevalent.

Diseased rabbits cause *tularemia*, a serious disease which may be contracted even without the eating—just in the skinning and preparing—of the rabbit. It would be better if hunters confined themselves to the sport and abstained from eating their quarry.

Canned food that has been improperly prepared is dangerous. Bacteria can grow inside and cause food poisoning. Botulism is the name for a severe form of food poisoning which often results in a fatal paralysis. (See page 471.)

Dangers may be lurking in **bakery goods**, especially those with custard fillings, such as eclairs, on which bacteria thrive. It is most important to buy your pastry from a clean, reliable bakery, and to put it in the icebox when you get it home. Make sure that the pastry has not been standing around in the bakery or in your home for a long time.

VENEREAL DISEASES

Venereal diseases are spread mainly by sexual intercourse. Syphilis has been known to be spread by kissing. The two main venereal diseases are syphilis and gonorrhea. In Chapters 33 and 34, I discuss in detail the treatment and cure of venereal diseases.

INSECT BITES

Bites of insects are a source of infection because insects carry germs either in the mouth or in their excrement. An insect bite makes a tiny break in the skin, like the puncture of a hypodermic needle.

Tick fever (Rocky Mountain spotted fever) is similar to European

typhus fever and is transmitted by the bite of ticks. In Mexico and southern U.S.A., a type more closely related to European typhus is transmitted by lice, ticks, and mites living on rats. *Malaria* and *yellow fever* are carried by certain mosquitoes. Most of the United States is free of malaria, but in parts of the South it has not yet been eliminated by destroying these mosquitoes chemically or getting rid of stagnant ponds and other breeding places. If you live in or visit areas where malaria exists, protect yourself against mosquitoes. Use a salve with an odor that repels them (page 213) and place mosquito netting over your bed at night, especially if your screens are inadequate. Rapid improvements are being made in quinine, atabrine, and other antimalarial medicines; but since there is no immunization against malaria, it is wise to find out whether the disease exists in your vicinity, and if so, take precautions against being bitten by malaria-carrying mosquitoes. You can be immunized against yellow fever. Although this disease has been eliminated in most of the civilized world, it is worth being immunized against if, for example, you travel to parts of South America or Africa which are near jungles where the yellow-fever mosquito still exists.

ANIMAL BITES

Any animal bite which breaks the skin should be thoroughly washed with soap and water and cleansed or cauterized by a doctor. (See First Aid, page 488.)

Rabies (hydrophobia) comes from the bite of mad dogs and other domestic and wild animals who harbor the virus in their saliva. If possible, the biting dog should be caught and studied by the health department. If the dog is infected, it dies within ten to fourteen days and the person bitten must receive the Pasteur treatment or the new serum to prevent rabies, a 100 per cent fatal disease. *If the bite is on the head, neck, or face, get the treatment started immediately without waiting to see if the dog dies, because the virus can reach the brain very rapidly.* The virus travels along the nerves of the body to the brain, so that the farther away the bite, the longer the trip to the brain. In bites on the foot, it has taken as long as a year for rabies to develop! Unless the dog is caught and found to be free from rabies, the Pasteur treatment or the new serum *must* be given.

If the dog has to be shot because of viciousness due to his disease, he should be shot in the body so that the undamaged brain can be studied in a health department or police department laboratory.

Any dog which is acting queerly should be examined by a veterinarian.

WOUNDS AND SCRATCHES

All cuts, wounds, and scratches are potential entrances for infections. They should be washed with soap and water and treated as explained in my chapter on First Aid, page 484.

One of the most serious dangers from wounds and deep scratches is *tetanus* (lockjaw). The tetanus germ is commonly found in the soil and wherever there are horses, cows, and manure. It is also found in the dust of city streets. A deep puncture by a nail is serious. Many people think it is the rust of a nail that causes the trouble. That is not true. The danger lies in the germs which may be on the nail.

The best preventive against tetanus is immunization by toxoid. Tetanus toxoid gives immunity for several years, and this can be renewed by a booster dose every five years, or after any wound. It is very wise to be protected by having been immunized with toxoid so you are prepared for any emergency. All doctors recommend it. Every man in the armed forces has received toxoid to protect him against lockjaw.

For the person who has not been immunized with toxoid, deep wounds or scratches require Tetanus Anti-Toxin (T.A.T.) as an emergency measure to prevent tetanus. T.A.T. is available in the emergency room of every well-equipped hospital, infirmary, or first-aid station. This provides adequate protection against tetanus, but unfortunately some people suffer unpleasant reactions to T.A.T. This does not happen with toxoid—which is an additional reason why you should have this important safety measure in advance of any possible accident.

TAKE REASONABLE PRECAUTIONS

I hope that after reading this chapter you will take sensible precautions against possible infections. Make it a habit not to drink out of glasses or use towels that others have used, to stay away from “sneezers” as much as possible, and to keep yourself and your house clean.

But don’t go overboard! We’ve all met or heard about people who are fanatics on the subject of germs. They are constantly scrubbing, boiling, or sterilizing their food, their homes, and themselves. They spray their noses and throats and the air about them with antiseptics, never touch a doorknob or sit on a toilet seat, shun others as though everyone had the plague, and generally wage a constant battle against contamination.

This is neither necessary nor effective. It is unnecessary because the odds are with us where germs are concerned. Most of them are harmless, and the dangerous ones seldom live very long under ordinary conditions. They soon die without the proper “food,” sufficient moisture,

the right temperature, and similar requirements. Most of them can't stand air and sunlight. Soap and water kills or removes them. Extreme methods of precautions are, as a rule, useless as well as unnecessary. Germicides, sprays and disinfectants either (a) don't reach the germs they are intended for, or provide protection for only the few minutes they are actually in use, or (b) are too weak to kill germs or so strong they injure the skin and other tissues.

How about a household disinfectant such as Lysol, used in the proper proportions? Personally, I feel that there is a danger of using such disinfectants as a *substitute* for cleanliness rather than as an aid to cleanliness. Sprinkling a little around makes everything smell so antiseptic that it is a temptation to go easy on the soap and water and elbow grease!

Fumigation after certain illnesses used to be required by law, and is still on the statute books in some states. However, scientific tests have shown that it is unnecessary and ineffective—except when it comes to destroying mice and vermin which can be handled better in other ways. It was often substituted for the far more valuable thorough cleaning job. Soap and water, fresh air, and sunshine are the best aids in killing germs.

If you take reasonable precautions to keep germs away, you will find there is room enough in the world for you to get along very well in spite of them.

(See also Chapter 38, page 808 on The Calculated Risk in Health.)

CHAPTER 8

Your Job and Your Health

ALL OF US who work for a living realize how important our health is to our jobs. To suffer from repeated illnesses or to feel continually below par are great handicaps in this competitive world. The healthy individual who can be depended upon, and whose capacity and skills are always at a high level, is in line for advancement, with better pay and greater security.

It is equally obvious that your job is vitally important to your health and that of your family. A good home, providing a proper health environment, depends to a great extent upon your income—either by itself or combined with those of other members who are working. Up to a certain income level, wages tend to determine the amount and kind of health-making food that can be purchased—to say nothing of clothes, recreation, medical and dental costs, and the many other things included in the total health picture.

In addition, one's work bears a close relationship to mental health. If the job is interesting and rewarding, we are apt to be happy and contented. This state of well-being is manifested in restful sleep, relaxed nerves, and a good appetite. This happiness is reflected upon all members of the family, whose emotional health then prospers, too.

We all know that accidents can result not only from inadequate safety measures on the job, but also from being jittery and tense. Doctors have learned that certain illnesses, such as stomach ulcers and high blood pressure, can be due to nervous tension. (I discuss *psychosomatic illnesses*—that is, conditions brought about in this manner—on page 249.)

I am sure I need go no further to make the point that your job and your health are closely bound up with one another. That is why I am so anxious to have everyone take stock of his or her job, both with regard to the specific hazards associated with it, and also with regard to its general health aspects.

HAVE YOU A GOOD JOB?

First of all, a good job should bring in enough money to supply you and your family with the adequate diet described in Chapter 2. There should be funds enough to provide adequate housing of the type described in Chapter 22, with sufficient left over for clothes, recreation, health insurance, and other essentials.

If your job doesn't enable you to provide these essentials, can you get a raise? Are there courses you can take or other things you can do that will lead to your promotion? If not, can you find a job with better possibilities? Your supervisor, foreman, or shop steward might be able to give you helpful hints, and so might your doctor and clergyman.

Some cities have job counselors or offer opportunities for you to discover how to fit yourself for a better position. *Vocational guidance* has made great progress in studying the "square peg in the round hole" problem. I suggest that you write the United States Employment Service, Bureau of Employment Security, U. S. Department of Labor, Washington 25, D. C., asking for the nearest local office where you can obtain counseling, testing, and job placement services. Veterans are entitled to similar services from the Veterans Administration.

If your job provides sufficient income but leaves you unhappy and frustrated, vocational guidance agencies may help you solve your problem. A frank talk with your doctor, who may send you to a psychiatrist or psychologist, will help you to discover whether you should try to adjust yourself to your position or to find another one. Ideally, your job should be interesting and should provide opportunities for advancement.

Your work should be as safe as modern technique can make it. A good job should not endanger your health. If you are frequently ill or have had accidents at work, it may be that you don't observe proper precautions, or it may also be the result of poor conditions in your place of employment. After reading this chapter you should be able to decide which it is. If it is the latter, bring the fact to the attention of your employers, either directly or through your foreman or union. If this fails to produce any improvement, the matter should be reported to the proper authorities, such as the department of labor of your state, or to your local or state department of health.

Of course there are cases in which neither you nor the job is to blame. You may not be suited physically or temperamentally to the work you are doing. That is, even though you are healthy, you may not be strong enough for a certain job, you may not have a sufficiently good sense of balance, and so on. Your doctor can help you to decide this question.

HOW TO STAY WELL ON YOUR JOB

All too frequently, *preventable* accidents or illnesses occur and result in the loss of health or earning capacity for varying periods of time. Different jobs have special health problems, and I shall take them up after I have discussed some rules to be generally observed.

GENERAL RULES

Come to work rested and relaxed. Fatigue is a source of accidents; late hours are a danger to your health. Plan your late dances, card parties, and other entertainment on the night before your day off from work. The same applies to drinking. Never drink so much that you have a hangover at work the next day. And, of course, drinking alcoholic beverages on the job is particularly dangerous. If you cannot control your drinking, be sure to read and follow the advice on page 694.

Regular periods of rest are decidedly important. One or two days off each week are essential. So is your annual vacation. Being rested helps to decrease accidents and illness—in addition to making it possible for you to create a good impression on the job by being at your best physically and mentally. Be sure not to ruin these days off by doing things to overtire you or injure your health. (I consider vacations so important that I have devoted the next chapter to them.)

Don't be afraid of being considered a "sissy" if you *make a point of finding out and following all the safety rules on your particular job*. Be sure to discuss precautions not only with your employer and shop steward, but with the older workers when you go on a new job. Don't be ashamed to ask questions, especially about the particular hazards you face.

If a fellow worker is a danger to you or to others, take up the matter with your shop steward or anyone in authority. *There is no place in any job for the practical joker—particularly in dangerous industrial or farming work.* Every year workers are brought to hospitals, dying or seriously injured, because practical "jokers" pushed a compressed-air jet against them. I have seen people who have been crippled as a result of "playful gags" such as the "hot-foot." The worker who insists on practical jokes or who doesn't know how to handle dangerous equipment is the cause of many accidents and deaths.

Find out where the *first-aid station* is located. Every place employing a large number of people will have a first-aid room. Many of the big factories have a full-time nursing staff, and sometimes a medical staff. Smaller ones have a first-aid station and safety personnel who know

how to use it. A squad of workers can and should be organized and trained to treat shock, minor burns, and cases requiring artificial respiration. Such easily arranged precautions can save lives. (Specific first-aid measures are given in Chapter 23.)

Electricity. Exposed wires, crossed circuits, and carelessness can cause shocks or burns anywhere that there is electricity. If you know of any wiring that is defective, be sure to call it to the attention of someone who can correct it. I discuss what to do for accidents caused by electricity on page 477, but I want to stress one fact in particular: *don't give up* if someone has apparently been electrocuted; artificial respiration continued over a period of hours has been known to save people who appeared to be dead.

Sure footing is essential, so be particularly careful if the floors or stairs are wet by chemicals or liquids. If there is a danger of slipping, be sure you have a handhold. Take up the matter if no handholds are provided.

Good lighting is also essential. Poor lighting can cause accidents, eye fatigue, dizziness, and headaches. Any job, from that of a miner to an office worker, can be made unpleasant and even dangerous if the lighting is poor; this is especially true where the work involves handling machinery. If your eyes feel strained after a day's work, if they are inflamed or puffy, you may need glasses or a change of glasses. However, this may be due to the fact that you don't get enough light. See your doctor. If he says the lighting is to blame, and the company for which you work doesn't seem inclined to do anything about it, ask him to write them suggesting they inspect and improve the lighting of your work space. Sometimes simply keeping windows and light bulbs clean will be sufficient. White or cream-colored walls help make a room light, and flat paint cuts down on the glare.

Rest rooms or lavatories will be inspected regularly by the department of health. If yours are not sanitary, or not adequately equipped with soap, etc., find out whether this has been done. Workers should be given adequate opportunities to make use of these facilities.

LEARN THE PARTICULAR HAZARDS OF YOUR JOB

Every job has its special health problems. Even sedentary occupations such as those of clerks and office workers are not entirely safe. House-

work, too, is dangerous. Women who work at home should carefully read Chapter 22 in which I discuss danger spots in the home, and tell how to avoid accidents which cripple and kill many people every year. They should also read Chapter 23 on First Aid, and page 779 on the ailments associated with housework.

In addition, salespeople, librarians, teachers, and others who come in contact with large numbers of people during the course of a day's work or in going to and from work, should protect themselves against the increased danger of exposure to respiratory diseases such as colds (page 734) and pneumonia (page 642).

SPECIAL PROBLEMS OF FARMERS AND RURAL WORKERS

It is not true that working on a farm is any healthier than in the city. Statistics show that the illness and disability rate are equally high in both places; in some rural areas, especially where doctors are scarce and hospitals poorly equipped, the residents may have even more health problems than the city dwellers do.

If you live in a rural area, be sure to learn the facts about the following diseases which may be found in many country communities:

Undulant fever (brucellosis) (see page 717)

Tularemia (rabbit fever) (see page 181)

Typhoid fever (see page 179)

Tuberculosis of bones and joints (see pages 180 and 669)

Dysentery (see page 722)

Malaria (in South) (see page 721)

Hookworm (in South) (see page 430)

Living in the country doesn't protect you against tuberculosis. Actually, the farmer needs to take every precaution listed in this book. And some extra ones, too.

For example, the milk obtained in cities is almost invariably pasteurized. This helps to prevent tuberculosis of the glands and bones, and other diseases, such as undulant fever and septic sore throat, that are spread by milk. Unless the farmer goes to the extra trouble of pasteurizing the milk from his own cow, he and his family are constantly in danger from these diseases. A friend of mine who is both a doctor and a dairy farmer sells his milk to a dairy company which has a pasteurizing plant. He then buys milk from them and has it delivered at his farm, so that his family will be sure to have only pasteurized milk. Many wise farmers do likewise.

Home pasteurization of milk is described on page 179. This process is absolutely essential for all farmers who use their own milk.

A less serious ailment that many farmers are subject to is constipation because they do not have a warm bathroom in which to relax. (See section on 'Constipation,' page 746, for how this problem can be remedied.)

ACCIDENTS ON FARMS

Rural Americans have a high accident toll. The lessened danger from traffic is counterbalanced by the frequency of accidents from farm machinery and other hazards. Farmers seldom have much "hard cash," and understandably try to save money by not buying expensive new equipment or not repairing materials in use. This may prove to be a dangerous economy because accidents become more frequent when machinery and vehicles become outmoded or worn out.

Tetanus (lockjaw) germs thrive in the intestines of horses and other grass-eating animals and are therefore found around barns and in soil fertilized by manure. This terrible disease, which can result from any deep wound such as one caused by stepping on a nail, is a constant threat to people living in the country. It can be prevented by inoculations. Everyone, particularly children, living in rural areas should be protected in advance against tetanus by inoculations. Never neglect a deep wound, however trivial it may seem; an immediate injection of protective serum may make the difference between life and death. Be sure to read the section on Tetanus (page 183).

Strenuous work in the open sun can lead to *heat stroke* or to *heat exhaustion*. Learn how to prevent these illnesses, how to distinguish between them, and how to apply emergency treatment if either of them occurs. (See pages 478 and 487.)

RURAL MEDICAL FACILITIES

Medical care, hospital facilities, and, especially, the advice of medical and surgical specialists are difficult to obtain in some farming communities. Make every effort to get the best medical care, even if it means taking a trip of several hundred miles to the nearest medical center or medical school. Your local doctor, however good he may be, should not be expected to handle every type of medical and surgical problem. If you go to such a medical center be sure your local doctor receives a complete report of the findings.

HAZARDS ON THE INDUSTRIAL JOB

Some jobs are more hazardous than others, for example, those involving mixing chemicals, using a blowtorch, drilling, baking, handling meat, construction, mining and lumbering. Usually several sources of danger are involved, some of which are peculiar to the particular job while others are common to various forms of work. For example, welders have to be on guard against four major threats to health and life: (1) Electrical shocks and burns, (2) burns from gas flames or splashes of hot metal, (3) damage to eyes and skin from the rays of the powerful arc lights, and (4) bad air caused by chemical fumes during the welding process. Yet, during World War II, women and new workers were successfully trained to work safely at welding. It was simply a matter of making certain that all the proper precautions were taken. I am stressing this one occupation to impress on you the fact that it can be done. Not every job involves as many risks as welding does, so there is little excuse for many of the industrial accidents and injuries that do occur.

Your employer should supply you with the instructions and the equipment necessary to reduce or eliminate the risks you face. Your union may have further information to give you. The main thing for you to do is to acquaint yourself with the dangers you may be up against; and never become lax—it may result in serious harm.

EIGHT MAIN OCCUPATIONAL HAZARDS

1. *Dust* can be a serious problem. It may come from the grinding, crushing, cutting, or drilling of metals, stone or coal. Industrial dusts are divided into the organic and the inorganic.

Organic dusts come from substances whose source is plant or animal life, such as coal, leather, flour, sugar, and feathers. Many organic dusts are not disabling or even harmful because the particles are too large to get into the finer and more delicate body tissues, or are not made of poisonous compounds. Organic dusts may produce allergies, skin irritations, or asthma. Miners of both soft and hard coal may develop a disabling shortness of breath because of the effects of coal dust on their lungs.

Inorganic dusts are in the main made from metals and minerals. The most dangerous inorganic dust is silica and causes *silicosis*. Silica dust causes fibrous nodules throughout the lung tissue. It also encourages the development of tuberculosis infection which may be severe enough to

cause death. Asbestos dust also causes an inflammation of the lung, called *asbestosis*, but is not as often a cause of death. Workers such as diamond cutters, rock drillers, asbestos-products workers, foundry and furnace workers, abrasive-soap makers, and packers are among those who may be exposed to silica and asbestos dust.

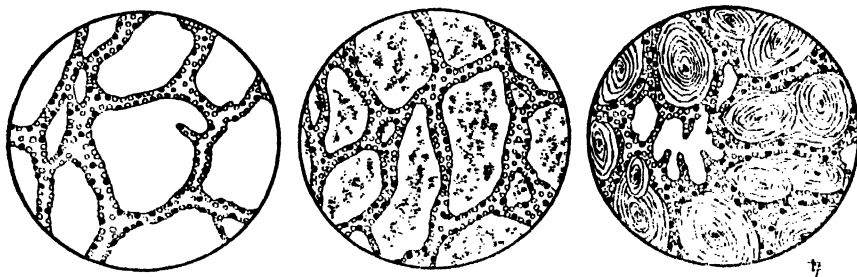


Illustration 8-1. FOREIGN ELEMENTS IN THE LUNGS.

LEFT: Microscopic section of a normal lung. **CENTER:** Similar section showing the presence of ordinary dust particles. **RIGHT:** Similar section showing changes due to the presence of silica dust.

Workers exposed to these dangerous dusts will most likely be protected by the use of exhaust systems or suction devices which catch the dust at its place of origin, or by covering the dust with oil or water to keep it from rising, and by good ventilation and the use of helmets and respirator masks. However well-protected they may seem to be, workers should have regular, periodic chest x-rays to detect early the presence of silica or asbestos in their lungs. They should be constantly alert for colds that don't seem to get better, prolonged coughs, or other symptoms of tuberculosis (see page 637).

2. *Skin diseases* are among the most widespread industrial illnesses. Chemicals, dirt, oil, germs—almost anything can irritate the skin. The chief skin trouble-makers are *petroleum* products such as machine oil, naphtha, or various cutting-oil compounds; *solvents* which include degreasers like kerosene, gasoline, and trichlorethylene; *alkalies*, like lime, caustic soda, and strong yellow soap; and *plants*, including poison ivy, sumac, and poison oak. Florists are subject to skin irritations from this group of plants. Furriers may be affected by paraphenyldiamine, and workers who use chromium in electroplating may develop chrome ulcers.

The list of skin afflictions is a long one. But whatever your job, there

are several important precautions you can take to avoid having trouble with your skin.

Soap and water should be used generously right after finishing any dirty or oily job, and also before eating lunch and before leaving for the day. Don't rub away oils that get on your face and hands. They only seep into the skin and clog the pores, causing pimples and irritations. First wash off the oil with soap and water, and then dry with a clean towel.

Gloves, sleeves, and aprons offering protection against skin diseases should be worn. Pull your sleeves over the cuff of each glove to make sure no skin is exposed. Make sure your protective clothing is kept clean and changed often.

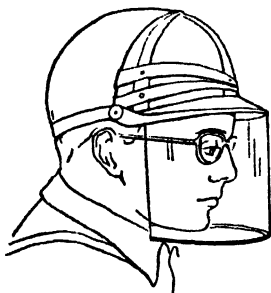
Dust, fumes, or gases harmful to the skin should be drawn off by suction hoods and the forced circulation of air.

Don't use advertised ointments for any skin disease you may develop. Visit your doctor and let him prescribe, because your skin ailment may require a very special prescription.

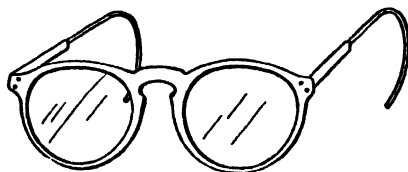
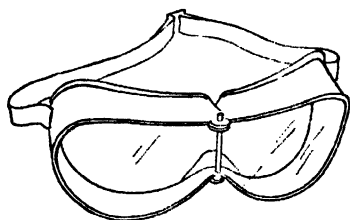
If you have taken these precautions and still suffer from certain chemicals or oils on the job, you may have developed an allergy to them. See your doctor, who may have to recommend another job if your skin is especially sensitive to the ingredients with which you are working (and if you can't be helped by precautions or desensitization; see page 739 re allergic diseases).

3. *Poisons* are a greater potential hazard to the health of workers in industries today than ever before, because of new inventions and the use of new chemicals and synthetic materials. *Lead poisoning* and the damage from inhaling *carbon monoxide fumes* are still common dangers. Although there are too many poisons for me to list them all, workers can familiarize themselves with the materials they are using, and find out whether they contain poisonous ingredients.

The following general precautions should be taken. If necessary and feasible, masks, gloves, and respiratory devices should be worn for protection. Good ventilation is the best protection against carbon monoxide (CO) and other toxic gases. If the work produces a lot of fumes, wear an air-line respirator and a safety line. Be on the watch for headache, vomiting, dizziness, and a flushed face. Do not eat in rooms where poisonous substances are handled. Cleanliness is very important. Use plenty of soap and water, especially before eating and before leaving the plant. Be sure to have regular medical examinations, preferably on the job by the factory doctor.



HELMET VISOR

SAFETY GLASS
(PRESCRIPTION GROUND)

TO FIT OVER EYEGLASSES

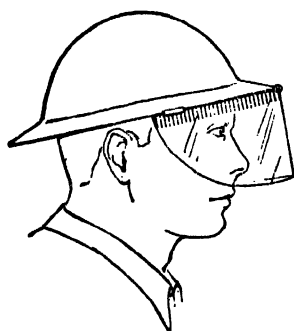


SHIELD (WIDE FANGE)

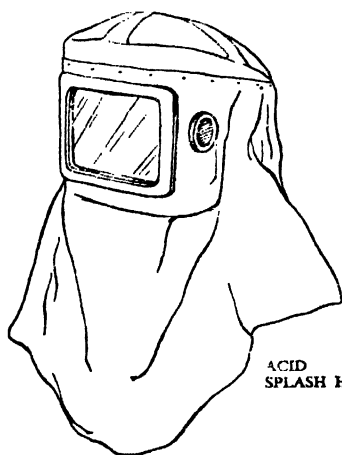
Illustration 8-2. TYPES OF PROTECTION FOR WORKERS WHO WEAR GLASSES.

The more common industrial poisons, and some of the jobs in which they may be involved include:

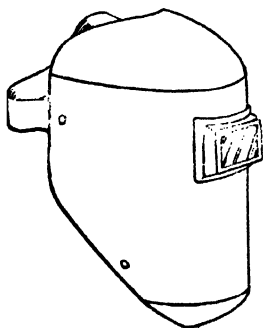
Lead poisoning. This can occur among bricklayers, color makers, dye makers, electroplaters, painters and paint makers, petroleum refiners, automobile workers, storage-battery workers, varnish makers, sheet-metal workers, lithographers, insecticide makers, explosives workers, rubber workers, and zinc miners. The more soluble forms of lead which may form particles in drinking cups are the more dangerous. Slow lead poisoning can result from small daily inhalations of lead dust over a period of time. The poison affects the stomach, the brain, and the nervous system. There may be paralysis of the muscles most frequently used, such as a painter's right hand. The precautions already mentioned, such as regular medical examinations, the proper clothing, and good ventilation are of utmost importance.



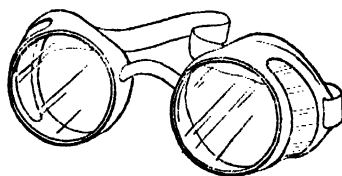
HELMET WITH
VISOR SHIELD



ACID
SPASH HOOD



WELDER'S HOOD



"CUP" GOGGLES

EF

Illustration 8-3. TYPES OF FACE-PROTECTORS.

Carbon monoxide poisoning presents a hazard to blast-furnace workers, firemen, air pilots, cooks, petroleum-refinery workers, plumbers, welders, miners, compressed-air workers, and others. It can come on without warning. Abdominal pains, headaches, nausea, and dizziness are early symptoms. In very severe cases, death may result. Good ventilation is extremely important to prevent the fumes from accumulating. Carbon monoxide mixes with the hemoglobin of the blood, preventing the blood from circulating oxygen. For first aid, fresh air and, if needed, an oxygen tank and artificial respiration, are effective in combating this poison.

Benzol and *carbon tetrachloride* are used, for example, by lacquer makers, leather workers, dry cleaners, soap makers, electroplaters, dye makers, paint and paint-remover makers. Benzol (or benzene) is a colorless liquid with a penetrating odor, used in making rubber goods, linoleum, celluloid, shellac, plastics, and artificial leather. The liquid

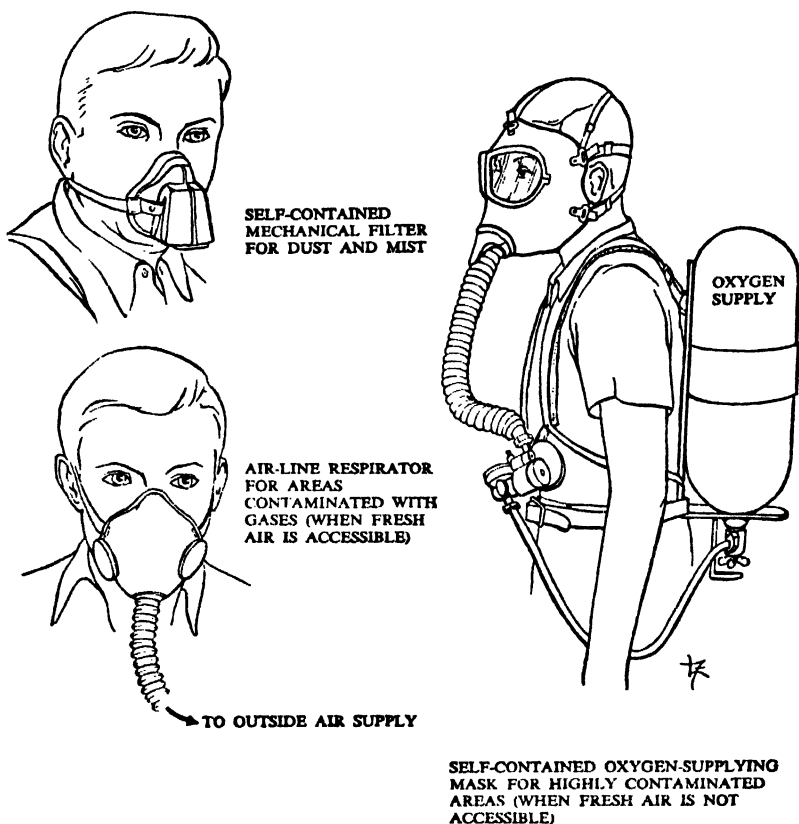


Illustration 8-4. TYPES OF PROTECTORS FOR RESPIRATION.

evaporates fast, but gives off a very poisonous vapor. It is possible to get benzol poisoning by breathing concentrated fumes for just a few minutes, although gradual poisoning is more common. For protection, the worker should wear an air-line respirator and a safety belt. All machinery containing benzol should be closed and inspected regularly for leaks. There should be plenty of ventilation in the room, and of course you should get your regular medical examinations. Unusual bleeding, especially a sudden nose bleed, calls for immediate medical attention. People who have tuberculosis, heart disease, anemia, or a tendency to bleed easily should not work in plants where benzol is used.

In addition to symptoms of nausea, headaches, and irritations of the nose and throat, carbon tetrachloride presents a serious threat to health in that it injures the liver and kidneys. Be sure to take all the precautions described above for benzol.

4. *Infections.* Workers who handle cattle may get *undulant fever* (brucellosis). Those who work with hides may get *anthrax*. Slaughterhouse workers, as well as farmers, have to guard against *tetanus*. Dog-pound workers must beware of *rabies*. Barbers and beauticians have to guard against *ringworm* (*fungus* infections).

These are only a few of the many possible industrial infections. Frequent washing of the parts of the body exposed, and the wearing of gloves, are valuable protection against infections. Be careful about cuts. They should be washed immediately with soapy water and then treated with mild tincture of iodine or other safe antiseptics. As a general precaution, if your job involves handling living or dead animals get your doctor's advice on the best precautions to use against the specific infections you face.

5. *Radiant energy.* Ultraviolet light and infrared rays can be harmful to the skin and eyes. The precautions include wearing goggles, helmets, shields, and masks equipped with special lenses.

X-rays, radium, and other radioactive substances give a quite different type of radiation which can be extremely dangerous. X-ray technicians, workers using radioactive isotopes, and radium workers who handle luminous paint are among those most exposed to the dangers of irradiation. (You may have read about the girls who painted watches with luminous paint some years ago, before the dangers were recognized; they were encouraged to "point" their paintbrushes in their mouths, with tragic consequences.)

X-rays and other similar radiations tend to destroy tissues of the body. They are used medically to kill cancer tissue which is more susceptible to the effects than ordinary tissue is. (See page 631.) Strangely enough, while radiation is effective against cancer, it can also produce cancer if there is too much exposure.

Radiation can do great damage by (1) causing cancer or leukemia (malignancy of the bone marrow); (2) producing harmful effects on the skin, including "burns," loss of hair and fingernails, and darkening of the skin; (3) affecting the organs which produce the blood, thus causing anemia and insufficient white blood cells. Certain substances which make clotting possible can be affected, resulting in hemorrhages—bleeding from the gums, blood in the stools, and hemorrhages under the skin; and (4) producing sterility in either sex, due to the action on the organs that produce the sperm or egg cells.

These effects usually do not occur until some time after exposure. In some cases, such as the development of cancer, they may not show up for years. Therefore, very great precautions must be taken, since you

won't be warned of the danger by any immediate symptom such as pain. X-ray technicians and others who are in constant danger of irradiation wear badges containing film which records exposure to these rays; the films are developed every week as a check.

Skin burns, damage to the blood, and sterility were all observed in victims of the atomic explosions at Nagasaki and Hiroshima.

6. *Dampness.* Tankmen, vatmen, coal miners and washers are among those who have to work exposed to the constant risk of dampness. This may cause coughs, colds, rheumatic diseases, and changes in the skin. Such workers should be as completely protected as possible by waterproof clothing, rubber boots, and gloves. Efforts should be made to control dampness by drain channels through which excess water is carried away.

7. *Abnormal air pressures.* Divers and men who build tunnels have to work under unusually heavy air pressures. When tunnel builders are sent underground, they travel in a chamber which descends slowly so that the air pressure is gradually increased. If they go down fast, the change is distressing. The first sensation is felt in the eardrums, and can be relieved by going through the motions of swallowing. If there is too great or rapid decrease in pressure "the bends" or "chokes" may result: that is, the blood supply from different parts of the body is blocked off by small air bubbles. Decompression sickness is dangerous, and can even cause death. It may come on several hours after a diver has returned to the surface. The treatment usually requires recompression.

Rising to a high altitude, which means entering a lower air pressure, can be just as harmful. Ascent as well as descent should be gradual. Pilots who rise too fast or take sudden dives may become dizzy, and the violent change in pressure may even burst their eardrums. Commercial planes are usually pressurized to prevent the effects of high altitudes.

8. *Abnormal temperatures.* Blacksmiths, welders, steel workers, furnace men, and others may be exposed to very high temperatures. Such exposure may result in heat stroke, heat exhaustion, and cramps. Very low temperatures may cause frostbite, gangrene, or death. Insulation or air conditioning, and protective clothing can help guard against these extremes in temperature. Additional salt, which may be taken in the form of coated salt tablets, is necessary to make up for that lost in perspiration. Relief periods—providing an opportunity to get back to normal temperatures—are extremely important. Workers should be on the alert for symptoms, and should ask for relief the moment they appear.

They should also report any colds or other disturbances to the company doctor or to their own physician.

I believe that everyone concerned in the major problem of industrial diseases—management, workers, doctors, and government and trade-union labor officials—should consider carefully these comments taken from the excellent book, *Medicine*, edited by Hugh G. Garland, M.D.:

"It has already been stated that there is no field of medicine which offers greater scope for prevention than the industrial medical field. . . . The late Sir Thomas Legge . . . after much practical experience in the field of prevention enumerated the following now famous axioms:

- (1) Unless and until the employer has done everything—and everything means a good deal—the workman can do next to nothing to protect himself, although he is naturally willing enough to do his share.
- (2) If you can bring an influence to bear external to the workman (i.e., one over which he can exercise no control), you will be successful; and if you cannot or do not, you will never be wholly successful.
- (3) Practically all industrial lead poisoning is due to the inhalation of dust and fumes; and if you stop their inhalation you will stop the poisoning.
- (4) All workmen should be told something of the danger of the material with which they come into contact, and not be left to find it out for themselves—sometimes at the cost of their lives."

Even though these axioms were based on the lead industry, they have wide applicability.

CHAPTER 9

Your Vacation

YOU PROBABLY look forward all year to your precious vacation—one, two, or perhaps more, wonderful weeks away from the office, the factory, or the routine of housework. You picture yourself lying on the beach, fishing in silvery brooks, climbing mountains, or driving through the countryside and stopping at pleasant farmhouses as the fancy takes you. Nothing to do but enjoy yourself and renew your strength, so that you will come home tanned and refreshed and eager for work!

Unfortunately the real picture is frequently very different. Vacations do not take place in a fairyland. The sun can burn as well as tan; the rolling billows hide an undertow capable of drowning the careless swimmer; poison ivy and stinging insects live in the green woods. As a doctor, I see too many vacationers who come home with a severe sunburn or in a state of physical exhaustion—or even with dysentery or typhoid fever. The saying, “I have to rest up from my vacation” is more truth than jest.

WHY GO ON VACATIONS?

If this has happened to you or to some member of your family, you may decide to swear off vacations for life. This year, you announce with determination, you’re going to stay home and relax. You’ll sleep late and go to ball games and the beaches and on picnics. In this way, you’ll save money as well as disappointments.

It is true that you can have a good time and a good rest without leaving home, although even that requires some medical information and common sense. But you can usually have a better and more profitable time by going away: a complete change of scenery and of people usually improves morale and makes for happier living. Don’t be discouraged by the length of this chapter, or by the number of warnings I issue. Do remember that I cover a wide variety of vacations, both in this country and abroad; also, I include special information for those who take vacations to avoid illness, such as hay fever or asthma, and

for those people who must take special precautions because of potentially serious chronic ailments. Only a few of the instructions will apply to you. If you follow them you will discover—to borrow from a popular radio program—that “vacations can be beautiful.”

I have already mentioned the usefulness of regular vacations in your health program (page 6).

BEFORE YOU GO ON YOUR VACATION

As I suggest on page 544, you should see your doctor *before* you go on your vacation—so that you won’t have to see him after it is over. I recommend that you have your annual checkup at this time so he can tell you how much and what kind of exercise you should undertake. If he says you are not in condition to climb mountains or play tennis, you can select a place where you won’t be tempted to participate in such activities. You will have more fun lying on the beach or sitting in a boat pulling in the fish.

Deciding where to go for your vacation is important. Your doctor will advise you to avoid certain places at certain seasons if you have a tendency to hay fever. (Hay-fever sufferers should read page 741.) Your doctor will find out whether a certain camp is close enough to good medical care to be safe for your small children. He will warn you that certain altitudes will force you to cut down on your activity until you become acclimated. A table of altitudes of popular vacation sites in mountain areas follows. This is particularly important for anyone who is suffering from impairment of the heart or lungs. (See pages 599, 636.) If the place you are considering is not included, write to the Chamber of Commerce in the city or town nearest to it, and they will provide the information you request.

TABLE 15

ALTITUDES OF VACATION AREAS

<i>East and South</i>	<i>Altitude in feet</i>
Atlantic Coast	under 1,000
Gulf Coast	under 1,000
Green Mountains, Vermont	
highest point, Mt. Mansfield	4,393
White Mountains, New Hampshire	
highest point, Mt. Washington	6,288
Lake Winnepesaukee, New Hampshire	504
Cadillac Mountain, Maine	1,530
Moosehead Lake, Maine	1,023
Rangeley Lakes, Maine	1,511

Grand Teton National Park, Wyoming	5,000–9,000
Yellowstone National Park, Wyoming: general elevation	7,000–8,500
highest peak	11,000
Laramie, Wyoming	7,159

Canada

Lake Louise and Banff National Park	peaks over 9,000
Quebec	192
Montreal	48
Toronto	296
Laurentian Mountains	less than 2,000

Mexico

Mexico City	7,800
Acapulco	Seaport town
Taxco	5,600
Cuernavaca	4,500

Although a vacation can't cure chronic diseases, some people are benefited by going to a "health resort" or spa. While the curative power of many famous mineral springs and baths has been greatly overrated in the past, the time spent in relaxing in an environment devoted to health, and under the care of a competent physician, can do a lot of good. Be sure to consult your doctor before you decide to take a vacation "cure."

Tell your doctor not only where you plan to go, but how you plan to get there, whether by train, plane, ship, or car. None of these modes of travel is in itself harmful, but each of them causes "seasickness" in some individuals. Your doctor has medicines to help *prevent* most cases of motion sickness (see page 758).

Your doctor probably hasn't the time to talk over every detail of your coming vacation with you. Undoubtedly you have already acquired some of the medical information you need: before going away on a "rough it" vacation, it will be well worth your while to reread Chapter 23 on First Aid. If convenient take this book, as well as the first-aid kit described in Chapter 24, with you.

RULES FOR VACATIONISTS

Wherever you go or whatever you plan to do, be sure to observe the following rules. Some of them seem so obvious you may wonder why I include them, but let me assure you they are broken regularly by even my most intelligent patients. One very successful executive I know has never managed to get through a vacation on his sailboat without suffering from a severe case of sunburn! Somehow, people get the idea that

they change themselves as completely as they do their appearances when they get out of their city clothes and into their sports outfits.

DON'T OVEREXERCISE

Don't plunge immediately into a full program of activity, especially if you do sedentary work the rest of the year. Going from a sea-level city to a high altitude and promptly indulging in a few highballs and a set or two of tennis can almost be guaranteed to bring about an immediate collapse. Take it easy the first day. Play ball or go swimming for only an hour or so and work up to full activity *gradually*. In this way you will avoid muscular cramps and "charley horse," or the exhaustion that may spoil your entire vacation.

If you are over thirty you may have to be even more careful. Heart attacks can occur, especially in men who are overweight. Too much of even a "mild" sport can be dangerous. Stop as soon as you begin to feel tired. A good rule to observe is this: if you pant or get completely out of breath, cut down on what you're doing or eliminate it entirely.

DON'T OVEREAT

You will be tempted to do so when you sit down to a hotel dining table lavishly laden with food. It is true that you are paying for it, and that you are ravenous because you've been exercising; but you're apt to pay for overeating. The extra food puts more strain on your heart which will be pumping pretty hard as you dash around the tennis court later on. Never stuff yourself until your stomach feels distended. Avoid rich foods during vacations that may give you indigestion at home; don't count on bicarbonate, etc. to make up for your excesses.

SUNBURN AND SUNTAN

Almost everyone wants to come home from vacation "as brown as a berry." To accomplish this, many people would rather lie and broil in the hot sun than recline beside a shady brook; and they feel cheated if the days are crisp or cloudy. They tend to confuse a good time and a good tan.

Sunshine is healthful for most people; it makes them feel and look better. However, it is almost certainly harmful to people suffering from certain diseases. These include tuberculosis of the lungs (page 637) which often becomes worse after injudicious exposure to the sun, nephritis (page 610), and certain skin diseases such as lupus erythemato-

sis. (However, psoriasis and some other diseases are helped by sunlight, page 750.)

No matter how anxious you are to get a good tan, don't try to do it the first day. You are very apt to get a burn that reddens and blisters your skin or even puts you in the hospital. You can prevent painful and ugly sunburn if you are careful about a few things. They include:

1. *Learn when and where the sun has the greatest burning power.* Watch out for the noonday sun! When the sun is high overhead its rays are short, direct, and burning. Late afternoon is a safer time to start your sunbathing. As the sun goes down, its rays are long and burn more slowly. Even when the sky is overcast, the sun can burn cruelly, so be careful on hazy days as well as on bright ones. Remember, too, that some of the worst cases of sunburn I've seen have been on people who went to the beach or to snowcovered mountains. This is because, *in addition to the direct sunlight*, there is a *reflected glare* from the sand and water, or the snow and ice.

2. *Know your own type of skin and how easily it burns.* Skins differ in their sensitivity to sunlight. Children burn more quickly than adults. Babies under two years, and delicate children of any age, need close watching when they start their sunbaths. Allow them only five or ten minutes at the start. Increase their time in the direct sun at the rate of about five minutes each day. People with fair skins are quicker to burn than are brunettes. Some people never develop a tan, and burn every time they stay out in the sun; others merely freckle.

For most people, *fifteen minutes is long enough* for the first sunbath. Each day after that, the exposure time can be lengthened by fifteen minutes. Time your sunbaths. Start with short ones and gradually make them longer so that you will get a good protective tan without burning. If you know that you burn quickly, start exposing yourself to the sun after four o'clock in the afternoon. The face, the skin in front of the elbows, and the legs are more sensitive to burning than are other parts of the body; they need extra protection.

3. *Use a suntan preparation.* Suntan preparations help to guard your skin against burning, but even the best ones give only partial protection, so don't fail to watch the clock just because you're using one of them. There are many such preparations, sold under trade names, and all are intended to promote a tan and discourage a burn. Some people prefer an oil; others like a cream or lotion. Before starting on your vacation, buy a good suntan preparation (such as Nutan, Tussy Anti-Sunburn Foundation Cream, Helena Rubinstein's Sun and Windproof Cream,

Daggett and Ramsdell's Sun Lotion or Debutante Sun Shade, or Noxzema's Greaseless Suntan Lotion). Some of these preparations work better on certain individuals than they do on others, so it is best to try out several of them. Unfortunately they are fairly expensive, and because they wash off in the water, or from perspiration, they must be applied repeatedly. The following preparations can be made up by any druggist and are as good as the more expensive ones:

Suntan Oil

	per cent
White mineral oil	44
Sesame oil	45
Methyl salicylate	10
Hydroquinone	0.2
Perfume	1

Suntan Cream

	per cent
Cold cream	39
Vanishing cream	39
Sesame oil	15
Methyl anthranilate	5
Cholesterol	2

Suntan Lotion

	per cent
Ethyl alcohol	86
Sesame oil	10
Butyl benzyl acetone oxalate	2
Tannic acid	1
Hydroquinone	0.2
Perfume	1

If you want to stay out in the sun without tanning or freckling, you will need a heavier type of preparation. Your druggist can make up a cold cream containing fifteen to twenty per cent of zinc oxide, or titanium oxide, or calamine. This will protect your skin from the rays of the sun so that it will not burn or tan or freckle. A heavy cream of this type may be helpful to people with skin troubles that are made worse by sunlight (but these people should use their own physician's prescription).

OTHER SUGGESTIONS FOR SUNBATHERS

Drink plenty of water when you are suntanning. You will need it to make up for the fluid you lose, even though you may not realize that

you are perspiring on a dry, sunny day. Take salt tablets or salty crackers, or tomato juice with salt in it, etc. (see page 19).

Getting overheated in the hot sun is dangerous for anyone. It may put a strain on the internal organs, particularly the heart and blood vessels. An elderly person or one with heart trouble or any disease should always ask his doctor about sunbathing.

The fact that you are enjoying yourself is no protection against *heat stroke* or *heat prostration*. (See pages 478, 487.)

You may be called upon sometime to help a person who has been burned by the sun. Sunburn can make people very sick, with chills, fever, and even delirium. Be sure to call a doctor if the burn is severe. Extensive and large blisters always need the attention of a doctor; there is danger of infection. In mild cases where the skin turns red, use a dusting powder containing equal parts of zinc oxide, boric acid, and talcum. For moderately bad burns where the skin is red and slightly swollen, apply wet dressings of gauze dipped in a solution of aluminum acetate, 1 part in 500 parts of water. Another soothing dressing is made by soaking gauze in cold white mineral oil. After the swelling goes down, replace the dressings with a soothing cream containing: cold cream, 88 parts; methyl salicylate, 10 parts; and benzocain, 2 parts. Any druggist will make these preparations for you.

The sun can help to make your vacation or it can spoil it for you. Don't let chance decide this important question.

WATER WISDOM

Swimming is one of the most healthful of sports. It exercises the body without overheating it. It develops strong, smooth muscles and good lung capacity. It can be enjoyed by healthy people from childhood to old age; and, properly supervised, it is even recommended for people recovering from certain diseases such as polio (infantile paralysis). However, don't decide for yourself that swimming is "good for what ails you." *Be sure to get your doctor's permission* if you have been ill recently or are suffering from a chronic ailment.

The health and enjoyment you will gain from swimming far outweigh its dangers, provided you acquire some "water wisdom."

IS THE WATER CLEAN?

First of all, find out whether or not the water you plan to swim in could be polluted. A silvery brook or clear blue lake may be contaminated by germs that can give you typhoid fever or dysentery; a swim-

ming pool may be too crowded or its water changed too seldom to protect you against a number of diseases. The local health department will know about the condition of pools and bathing beaches in its territory. Feel free to *check with them*. This is particularly important if there is an epidemic of some disease such as polio.

SWIMMING TIME

Don't go into the water immediately after meals, or when overheated or tired from other exercise. Always come out *before* you get tired or chilly. A swim should leave you relaxed and comfortable. If it doesn't, you have stayed in the water too long. Take a shorter swim next time. Remaining in the water when you feel chilly lowers your resistance to infections such as colds, pneumonia, polio, or sinus or ear infections. Getting overtired is dangerous, too. It puts a strain on your heart and blood vessels.

DOUBLE SAFETY

On a long swim have someone row along beside you, or go with another good swimmer. Be sure that you both know lifesaving methods. The most expert swimmer may drag you down if he gets a cramp. Rescue training will teach you how to avoid his clutches while you tow him to shore. Unless you both know lifesaving methods, better swim parallel to shore or stay within rescue distance.

No matter how well you swim, stay very close to shore if you are swimming in an isolated spot. The races you won in high school will not protect you against cramps!

Don't attempt a long swim on the *first few days of the season*. Your swimming muscles have lost their strength through the winter. Give them time to get strong again before tackling rapid currents, a heavy sea, or a long-distance swim.

Someone else may not be as sensible as you, so familiarize yourself with the first-aid instructions for applying artificial respiration given on page 472.

FEET FIRST

Before diving in a new place, test the water for depth and hidden logs or rocks. Lakes and rivers change in depth according to rainfall. In salt water, there are high and low tides to consider. *Find out for yourself* whether your dive should be a shallow one. Don't risk a broken neck.

If you have trouble with your sinuses or ears, give up diving and

underwater swimming. Water in the nose washes away protective secretions that help prevent infection. In addition, infections can wash into the sinuses through the nose, or reach the middle ear through the Eustachian passage from the throat (see Illustration 6-14, page 138).

POISON IVY

One or more varieties of poison ivy appear in many parts of the United States. These plants are responsible for about 350,000 cases of skin poisoning every year. It is well worth your while to learn how to avoid joining these sufferers!

Poison ivy grows in the form of climbing vines, shrubs which trail on the ground, and erect shrubbery growing without any support. It clings to stone and brick houses, and climbs trees and poles. It flourishes abundantly along fences, paths, and roadways, and is often partially hidden by other foliage. The leaves vary in length from one to four inches. They are green and glossy in summer; in the spring and fall they are red or russet. The fruit is white and waxy, resembling mistletoe. Although poison ivy assumes many forms and displays seasonal changes in leaf coloring, it has one constant characteristic which makes it easy to recognize. *The leaves always grow in clusters of three*, one at the end of the stalk, the other two opposite one another. The old jingle, "Leaflets three, let it be," has helped children and adults to recognize poison ivy at a glance, and to avoid it "like poison." (See Illustration 9-1.)



Illustration 9-1. POISON IVY.

Common east of the Rocky Mountains. Three leaflets; grayish berries in season.

POISON

The irritating substance in poison ivy is the oily sap in the leaves, flowers, fruit, stem, bark, and roots. The plant is poisonous even after long drying, but is particularly irritating in the spring and early summer when it is full of sap.

POISONING

Most cases of ivy poisoning are due to direct contact with the plant. Some are caused by handling clothing, garden implements, and pets which have been contaminated by the oily sap. People differ in their sensitivity to poison ivy. One of my patients is so sensitive that exposure to smoke from a brush fire containing poison ivy resulted in a severe inflammation of her skin. Too many people suffer from ivy poisoning because they haven't learned to recognize poison ivy; they walk through it, brush against it, and even gather its attractive foliage. They usually transfer part of the irritant on their hands to their faces and other parts of their bodies. I have seen some really serious cases of poisoning in the mouth because children—and, occasionally, adults—have eaten the leaves or berries of this poisonous plant.

If you realize that you have accidentally handled poison ivy or brushed against it, wash your skin as soon as possible. Yellow laundry soap is best for this purpose. Lather several times, and rinse in running water after each sudsing. This should remove or make less irritating any oil which hasn't already penetrated the skin.

SYMPTOMS

The first symptom is a burning and itching sensation. This is followed by a rash and swelling and probably small or large blisters. The length of time clapsing between contact with poison ivy and the first symptom varies from a few hours to seven days.

SEVERE CASES

If there are large blisters, severe inflammation, or fever, or if the inflammation is on the face or genitals, a doctor's help is needed. He will know how to relieve discomfort and guard against secondary infections until the attack subsides, as it eventually does.

Stubborn cases which do not respond to proper treatment may be due to repeated contact with contaminated clothing. Any suspected garments should be dry cleaned or washed with plenty of soap.

TREATMENT OF MILD CASES

When there are only a few small blisters on the hands, arms, or legs, the following treatment may bring relief: Apply compresses of very hot, plain water for brief intervals. Or apply a compress soaked in a dilute Burow's solution (1 pint to 15 pints of cool water). Your druggist will supply you with Burow's solution.

If these methods don't help, consult a doctor.

PRECAUTIONS

Most people will be safe if they learn to recognize the "leaflets three," and let them be. Campers, field men, and others whose activities take them through underbrush and into the deep woods require the further protection of clothing which really covers the body. This means trousers, long sleeves, and gloves. It should be remembered that garments worn for such work as digging up poison ivy become contaminated with the irritating oils. They are not safe to handle or to wear again until they have been laundered or dry cleaned.

IMMUNIZATION

Although several methods of inoculating against poison ivy have been developed, it is generally believed that they are of little or no benefit. One attack of poison ivy doesn't leave you immune; in fact, it may make you more susceptible.

ERADICATION OF POISON IVY

Poison ivy should be eradicated wherever and whenever possible. Growing and spreading through school grounds and parks, it is responsible for much needless suffering and expense. Communities and civic groups should insist that poisonous plants be removed, especially from grounds where children play. Find out whether, and where, your vacation resort has eliminated poison ivy.

OTHER POISONOUS PLANTS, BERRIES, ETC.

The methods of preventing ivy poisoning, and the treatments for it, are effective for oak-leaf poison ivy, western poison oak, and poison sumac.



Illustration 9-2. POISON SUMAC.

Seven to thirteen leaves;
pale waxy berries in season.

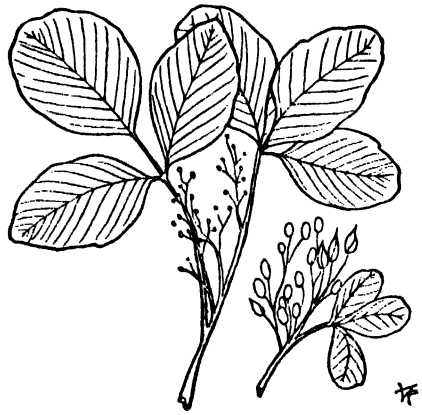


Illustration 9-3. POISON OAK.

Found mainly on the Pacific Coast.
Three leaflets; white berries in season.

There are a number of poisonous berries, and over eighty kinds of poisonous mushrooms. Every year people die or become seriously ill because they have decided that one of these "looks good enough to eat." Children are frequently tempted by poisonous holly berries or the berries that grow on privet (the shrubs often used for hedges). Adults are apt to place their faith in some incorrect notion, such as the old superstition that you can tell mushrooms from toadstools by cooking a silver coin with them, which is supposed to tarnish if the variety is poisonous. Pay no attention to these old wives' tales; they cause a number of deaths every year. Although it is possible to learn to identify poisonous mushrooms and berries, it isn't easy. It is much wiser to play safe. Train your children not to eat things they find in the woods or fields, and set them a good example by not doing it yourself.

What to do in case of mushroom or berry poisoning is described on page 471.

Be sure to check with local authorities before you decide to bring home a mess of clams or oysters for dinner. The beds they grow in may be contaminated by typhoid and other germs! Not only that, but mussels, clams, and certain other shellfish are dangerous during some seasons of the year. They become poisonous as a result of feeding on microscopic organisms that appear in the ocean during the warm months, particularly in the Pacific.

INSECTS

Insects run poison ivy and sunburn a close second in ruining vacations. Pest control programs have helped to reduce their number and ferocity, difficult as this may be to believe when a mosquito is ruining your night's rest.

Spraying with insecticides will help get rid of most insects. The "space sprays," such as aerosol bombs, kill insects in flight, and are useful in rooms that are screened to prevent more pests from entering. Among the best and safest ones are the pyrethrum space sprays such as Flit Aerosol Bomb, Special Gulf Spray, or Improved Deodorized Fly-Tox AA. If you want to prevent insects from entering, use a residual-type spray that covers surfaces with a coating which remains effective for up to a month outdoors, two months indoors. To do this, apply a 5 per cent residual spray (such as Black Flag, Flit, or Pestmaster) to screens, porches, shrubbery, and so on. These are also good for getting rid of cockroaches, and bedbugs, but be sure to air the bed and mattress thoroughly after spraying.

Dusting 10 per cent DDT powders (Tat or Pestmaster Powder) around the places in which your pets sleep helps to control fleas. Dogs can be dusted with these powders, but don't use them on cats since they are apt to get sick from licking the powder off. Spray them with one of the 5 per cent DDT sprays mentioned above.

For ants, as well as roaches, use Flit Roach Killer, Roachmaster, or Black Flag Roach Spray. Apply with a brush around the ants' nests and the places where they enter the house.

The insecticides I have mentioned are relatively safe. However, *all insecticides contain material poisonous to human beings, especially children*. Be careful how you use them. Read the directions on the label. Don't spray food, dishes, or anything infants or children may touch or put in their mouths. Wash your hands and face after applying insecticides. *Many insecticides are inflammable*; unless the label definitely states that this is not the case, don't use them around open fires.

Don't use a vaporizer—a device which gives off insect-destroying vapor for hours at a time, in order to get rid of insects. It has not been proved that the constant presence of any such vapor is harmless.

INSECT REPELLENTS

The United States Department of Agriculture has spent years studying the best way to keep insects from biting human beings. They have produced formulas containing combinations of chemicals, applications

of which will repel insects for about two hours. The following materials have been found to be safe and generally effective. They can be used separately, although combinations of them provide more protection against a larger variety of insects:

dimethyl phthalate
dimethyl carbate

Indalone
2-ethyl-1, 3 hexanediol
(Rutgers 612)

Most druggists can supply you with dimethyl phthalate. They may also be able to provide you with the following combination, or formula, which is marketed by several firms; it is sometimes referred to as "6-22."

Dimethyl phthalate, 60%; Indalone, 20%; Dimethyl carbate, 20%.

Always try these materials or formulas on a *small area* of your arm or leg before using them liberally, to see whether you happen to be sensitive to them. As a rule, they will not cause any irritation. However, they are poisonous if taken internally and harmful if they get into the eyes. Be careful with them. They will also damage plastics and some synthetic materials, especially rayon—but not nylon. Fortunately they do not hurt cotton or wool, so they can usually be rubbed on socks as well as on ankles, for double protection. Some people object to the oily consistency of these insect repellents, but most people find that a small price to pay for protection against black flies, gnats, mosquitoes, and other pests.

INSECT BITES

Scratching bites irritates them, sometimes causing infections. See the chapter on First Aid, page 488, for treatment of bites from bees, wasps and ants.

Ticks fasten their heads into the skin of their victim and suck his blood. To remove them, hold a hot needle or a lighted cigarette near their hind ends. This makes them let go, so that the probed head will not remain under the skin when they are removed with a pair of tweezers. You may find it easier to put some lacquer nail polish on them so that it covers their heads, too. When the polish dries, they will let go. Put some iodine on the tiny "wound" after the tick has been removed. Destroy the tick, but don't use your bare hands to do it.

The only really dangerous *spider* in this country is the black widow. It, and *scorpions* and *centipedes*, are discussed on page 488.

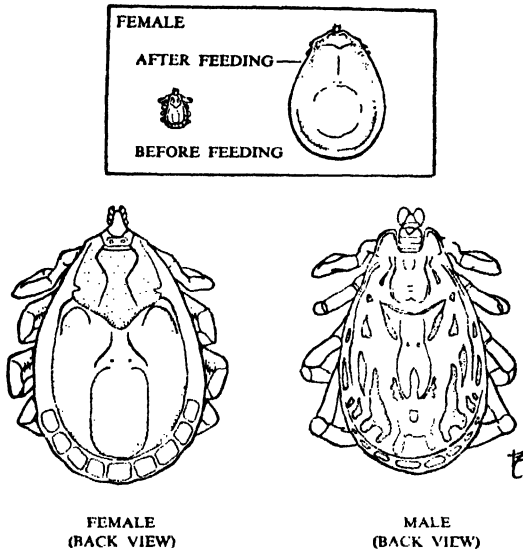


*Illustration 9-4. THE COMMON WOOD TICK
(SHOWN GREATLY ENLARGED).*

SNAKES

There are poisonous snakes in every part of the United States with the possible exception of Maine and New Hampshire. However, in many vacation resorts a snake is as rare as it would be on the streets of a large city. If you are going to a snake-infested part of the country, be sure to read carefully page 478, and *take along the snake-bite kit which your doctor will help you to obtain.*

INOCULATIONS

If you were in the armed forces you probably feel as though you have been inoculated against every existing (and a few nonexistent) diseases. Nevertheless, you should discuss the matter with your doctor, because time passes and you may need a booster shot.

TYPHOID FEVER

Everyone going to the country should have an inoculation against typhoid fever (see page 175). When there is any doubt about the purity

boiled milk, but this can be disguised by chocolate syrup or a drop of vanilla. To pasteurize milk yourself, consult page 179.

TETANUS (LOCKJAW)

I advise my patients to be immunized against lockjaw, especially if they are going to be in areas in which there is a special risk of being infected by the tetanus bacillus. As this tiny germ thrives in the intestines of grass-eating animals, particularly horses, it is found in and about stables and in garden soil treated with animal manure. It usually enters the body through a deep wound such as is made by stepping on a nail, which frequently happens to children who go barefoot. Any punctured or torn wound, especially one soiled by dirt or having bits of clothing or other contaminated material forced into it (which often happens in Fourth of July accidents with firecrackers) is dangerous.

Tetanus is easy to prevent, but *one half of the people who develop it die from the disease*. The longer treatment is delayed, the less chance of recovery. Read carefully the section on tetanus (page 183) and remember: *any deep wound requires the immediate attention of a doctor*.

MALARIA

There is no danger of malaria in most vacation sites, since they have been freed of the malaria mosquito. If you are going to a rural area in the South, ask your doctor if this mosquito still exists there, and for ways of guarding against the disease.

VACATIONS IN FOREIGN COUNTRIES

If you are going abroad, be sure to tell your doctor where you are going. He may advise smallpox vaccinations: you will run into difficulty if you try to reenter the United States from certain countries without a certificate saying you have recently been vaccinated against smallpox. Typhoid "shots" are essential for some countries; and your doctor will tell you how to protect yourself against amebic and bacterial dysentery which are prevalent in many parts of the world.

ANTIBIOTIC FIRST AID

Travel to isolated places can now be made nearly one hundred per cent safe as far as such diseases as pneumonia, acute appendicitis, blood poisoning, meningitis and many other illnesses are concerned. The "won-

der drugs" have made "first aid" possible for these dangerous diseases.

Until fairly recently, penicillin had to be given by injection, which is not feasible for the average person. Now it is available in tablet form; it is effective when sufficiently large amounts are taken by mouth. The newer antibiotics such as Aureomycin and Terramycin can be taken the same way. They are as good as penicillin in fighting the pneumococcus and streptococcus germs, and they have the additional advantage of knocking out other microorganisms. Even some of the viruses are destroyed by certain antibiotics. With them, and a little know-how about this new type of first aid, even people who go far from the beaten trails can feel comparatively safe.

I do not believe in the careless, indiscriminate use of these antibiotics. Like other medicines, they have specific functions and hazards. First aid is *emergency* therapy, and should be followed as soon as possible by supervised medical care. No one who treats an injured person for a fracture on a hiking trip would do more than apply splints and other first-aid measures. This in itself is often lifesaving, minimizing damage during the trip to the doctor by preventing blood vessels from tearing. Similarly, if you were traveling in an isolated part of Mexico or in some of our own forests, and your traveling companion experienced a cough, chill, fever of 104 degrees, rusty expectoration, and pain in the chest, it wouldn't take you long to suspect that pneumonia had set in. A two-day carry of such a person over rough trails might cause his death. But, given the right amount of antibiotics, his illness could be brought under control and he could be safely transported to the nearest doctor or hospital. There the treatment would be supervised by a physician until the disease was completely cured.

If you are going to an isolated spot, *ask your doctor* for instructions in antibiotic first aid. These should include (1) a prescription for one of the antibiotics having a wide range of activity, (2) exact directions for when it should be used (definitely not for mild colds and fevers), and (3) an agreement that when you return you will make a complete report to your doctor regarding when and why you used the antibiotic; let him decide what to do with any unused medicine.

Another good reason for carrying your own supply of antibiotics is that they are still hard to obtain in some parts of the world, including certain well-populated areas.

WHEN YOUR VACATION ENDS

People often start for home feeling happy and relaxed, only to arrive tense and exhausted after a long bumper-to-bumper drive through Sun-

day traffic. You can undo much of the good your vacation has done you by trying to prolong it till the last minute. Allow time enough to take it easy on the way home. Get there in time to unpack, read your mail, and make those phone calls you simply have to attend to before you can go to bed. In that way, you will get the full benefit of what ought to be the happiest and healthiest weeks of your life.

Climate and Illness

IF YOU or someone in your family has a long-lasting illness, you have undoubtedly at some time considered moving to a better or different climate. Before you decide to make a major change for the sake of a more healthful climate, my advice is: think not twice but three times! Then stop and reconsider. The chances are very high that you are making a mistake, and once the change has been made—and jobs given up and connections severed—the road back may be impossible.

It is true that certain climates are better than others, especially where individual tastes are concerned. People who hate the cold wonder why anyone lives in Maine except from sheer necessity, while those who suffer from the heat feel the same way about the inhabitants of most of the southern states. There is no doubt that many people feel better in a high, dry climate than they do by the damp seaside. Also, some diseases are benefited by certain climates.

"Then why," you ask, "do you warn us against moving?"

The answer is: man is a complicated being. He is never just a "case" of tuberculosis, asthma, rheumatism, heart disease, and so on, but rather an individual who happens to suffer from an ailment. A number of factors, therefore, should be taken into consideration before uprooting one's self or one's family. Changing location for the climatic treatment of health is far too often done hastily or recklessly, without proper consideration.

SOME PROBLEMS INVOLVED IN MOVING

Take the case of one of my own friends: Mr. A, a lawyer, is troubled with serious sinusitis. There are days when headaches make life close to unbearable, but he manages to carry on a remunerative practice despite the difficulties. It is true he has developed a violent distaste for the frequent and sometimes painful visits to his nose-and-throat specialist, his family doctor, and his allergist. They all help him, but nobody can provide consistent or complete relief.

One day Mr. A meets a business acquaintance from the Southwest. This booster for his own good climate tells him that sinusitis doesn't exist there, and urges him to move out "where we're all healthy." Mr. A is in a particularly bad period of his sinusitis. In desperation—and hope—he closes his office and moves to southern Arizona.

There is a profound and immediate improvement in his sinusitis. He is overjoyed.

But he soon discovers that he has merely traded one headache for another! The legal profession in some southwestern cities is already oversaturated by the native sons plus the lawyers afflicted with tuberculosis, arthritis, sinusitis, hay fever, and other complaints who have migrated year after year from other parts of the country.

Mr. A has a difficult time. His attempts to earn a living in business and as a salesman don't work out. He suddenly realizes how much his profession means to him. The hot summers bother him.

The experiment has been a failure. He returns to his home, two thousand miles away, and starts to rebuild his practice.

The decision to move had appeared so sound to Mr. A that it would have seemed juvenile to consult anyone about it. Yet if he had discussed it with his trio of doctors, they would probably have given him some sober advice. I say "probably" because climatology is rarely taught in our medical schools, and many physicians are not well informed on this complicated and important subject.

Assuming Mr. A's doctors had thought seriously about climate and health, they would have said to him, "Look, we know you suffer excessively from your sinus headaches. Much of the time we can give you little or no relief. There is a good chance that you may actually be free of symptoms in the Southwest. The headaches and the annoying drip in the back of your throat will probably disappear, and you'll feel better generally.

"But," they might have continued, "how will your nerves hold up if you can't make a living at your tried and beloved profession? There is no point in exchanging your sinusitis for a stomach ulcer which might result from your tension and worries! Besides, you know you have a tendency toward coronary artery trouble. How is your heart going to react to the relentlessly hot summers in the desert country?"

A compromise could have been arranged. Mr. A had reached the point where he was so desperate about his illness that he was willing to consider drastic measures. This would give his doctors the opportunity to get him to accept a program that could safeguard his profession while preventing or overcoming the worst attacks of his illness.

For example, a long winter vacation could be arranged in the Southwest or some other region where his sinusitis would improve temporarily.

During the summer months he could spend his weekends away from the humid city in a high, dry atmosphere. At home and in the office, the nearest thing to Arizona climate could be provided—a filtered, air-conditioned atmosphere with temperature and humidity controls he could adjust to his own comfort. Expensive? Of course. But far cheaper than the plan Mr. A actually followed.

ILLNESSES IN WHICH CLIMATE IS HELPFUL

You are probably asking, "But aren't there illnesses that demand a change of climate, where any amount of sacrifice is justified?"

There are some, but they are very few, and fortunately they are becoming even less numerous because (a) new treatments are being developed, and (b) air-conditioning equipment is improving and becoming less expensive.

Many people uproot themselves because of tuberculosis. Yet, contrary to popular legend, tuberculosis does not require a change of climate. It has been discovered that mountain or desert air is not essential for the sanatorium treatment of tuberculosis. Experts are now satisfied that its cure demands only *physical and mental rest, good food, and expert medical care*. These usually can be provided better in a sanatorium near one's home—where family and friends can visit—than in faraway places. (See page 639 for treatment of tuberculosis.)

The problem is less clear-cut in cases of asthma. This disease may originate in various different ways. In a fairly large number of patients there is a psychosomatic factor. (See Asthma, page 665.) This means that attacks are precipitated by emotional factors. A dry, warm climate may benefit the disease if there is no serious emotional disturbance involved. But an injudicious change to a strange area, the loss of a job the patient values, and loneliness for family and friends may be so disturbing that they throw the balance the other way.

The same reasoning applies to the patient with arthritis. The severest joint troubles are partly of infectious origin—seemingly touched off by streptococcal germs—and partly of an emotional nature (See Arthritis, page 668.) If the change of climate benefits the emotional as well as the infectious part, the patient will improve tremendously. But if only one and not the other is helped, then the move may prove to be a serious error.

Some chronic infections of the lung, such as *bronchiectasis* (see page 637) with a large discharge of pus, and the severe forms of bronchitis may require a change to a mild climate. For some of these patients, climatic treatment may be lifesaving.

HOW TO DECIDE ABOUT CHANGE OF CLIMATE

How does one steer a safe course in such a complex field? Painful symptoms and, especially, the threat of irreversible damage from potentially crippling diseases like arthritis and asthma demand the most careful thought and decisions. I think it is possible to reach the correct decision by evaluating a few facts about climatology and by following some simple rules.

(1) Go slowly. The diseases benefited by moving to a mild climate are mainly chronic, slow-changing ones. Your decision need not be hurried. It can be made after months of careful deliberation.

(2) Review the entire situation with a panel of medical experts. Your family doctor will welcome an appointment with a specialist to go over the details of your illness. The cost may appear to be high, but it is always small compared to the expense of changing your whole way of life.

New treatments are constantly being developed. The specialist may suggest a trial period with a new medicine such as ACTH or cortisone. Or some other therapy may promise as much relief as a change of climate.

The specialist may even suggest discussions with a psychiatrist to try to relieve some of your nervous tensions. Emotional factors frequently act as a trigger to set off attacks of asthma or arthritis.

Perhaps the specialist will take the view that a change of climate offers the only hope for relief. In that case you have the assurance that the drastic change in your life is really necessary. Your family doctor will welcome the specialist's aid in making the decision about the climate that will be best for your particular condition.

I recall a friend who moved his family from the East because of his wife's asthma. Someone had told them "Los Angeles is the place for you." Friends there rented them a house and they moved out.

Several months later my friend's doctor received a distressing, almost frantic letter saying that the patient was very much worse than when she had left home. The situation seemed desperate. The husband had located a job and cut himself off completely from his work in the East.

The doctor communicated with physicians in Los Angeles. They knew the answer, which is obvious to old residents of Los Angeles County: there are actually several distinct climates there. The patient had settled on the coastal strip and was exposed to weather as damp as that which she had left. When she moved twenty miles inland, closer to the desert and behind mountain ranges which protected her from the

ocean, she found the warm, dry semidesert air that greatly benefited her particular type of asthma.

When a child has asthma, a careful review of the medical situation is necessary, sometimes requiring the combined judgment of a pediatrician, an allergist, a nose-and-throat specialist, and perhaps a child psychologist. Even if you live on a farm or in a small community, it will be worth the time and money to travel to the nearest medical center for a consultation with specialists.

If the specialists and your own doctor agree that the change of climate is essential, then take their advice—but act in gradual steps! I always urge my patients to remember that we doctors may merely be expressing an opinion when we say, “I think this is a wise step. I hope it will prove beneficial.” No one can guarantee absolute success.

TRIAL PERIOD

It is best to qualify your optimism and *give yourself a trial period*. If you are the sick person, take a relative or friend along and try the suggested location for a few months in the winter *and* the summer. You may find that you feel wonderful all year. On the other hand, the beneficial effects of a dry climate in winter may be completely nullified by the blistering heat of summer. Only actual experience can answer this.

A sick child can be placed in a special school in the selected climate for a year, if the family can afford the expense involved. If the asthma, rheumatic fever, or other illness shows marked improvement, the other members of the family can take time to make the move.

SHOULD ELDERLY PEOPLE MOVE TO MILDER CLIMATES?

Elderly, retired people often wonder whether changing to a mild climate will be desirable for their health. I recommend the same careful program for them that I have outlined for sick people. Consultation with their doctors and a trial period are equally important for them, for a change of climate is splendid for some and very bad for others. To many of us, intellectual and emotional climate is more important than physical climate. Old people often become lonely and miserable when they move away from their home towns, and happiness is essential for their well-being. They should act carefully and experimentally before chang-

ing their homes in the hope of prolonging their lives (see my chapter on The Later Years, page 788).

Data on climatic conditions can be obtained from:

U.S. Weather Bureau, Washington 25, D.C.;

U.S. Public Health Service, Washington 25, D.C.

PART TWO

**YOU AND YOUR
MIND**

The Normal Mind

WORLD WAR II helped strip away the mask of secrecy which has surrounded emotional illness. Selective Service rejected more than a million men because of personality problems or more serious types of emotional disturbance. This represented a large percentage of all rejections; it was higher than the rejection rate for tuberculosis and heart trouble.

The war did not create these cases of mental illness. They had been present long before that time. But the public preferred to take an ostrich-like attitude toward them. Fortunately, we are now beginning to grow up with respect to health problems of all kinds. We are learning to talk freely, honestly, and sympathetically about emotional illness.

According to reports from the medical profession, representative American men and women are asking their doctors a great many questions about mental health and illness. They want to know such things as what constitutes a normal person, what the term "inferiority complex" means, and whether anything can be done to prevent tension, "nerves," and "breakdowns." They want to find out how to cope with jealousy in themselves, and how to establish a sound sexual relationship with their mates. They want to know how emotional problems arise, how they can be prevented, and what can be done to relieve them. They want to safeguard mental health for themselves and their families.

Such questions are not indications that the people who ask them are morbid or abnormal. On the contrary, interest and frankness are steps in the right direction. Facing their emotional lives and problems honestly and seriously is a normal way for most people to enrich and deepen their understanding of their own personalities and those of others. This makes for better relationships with friends, family, and children.

But, despite these healthy trends, many misconceptions persist. How many of them do *you* subscribe to? Take out your pencil and jot down "True" or "False" to each of the following statements:

1. Only a very few types of mental illness can be inherited _____
2. Masturbation does not cause insanity _____

3. A certain amount of daydreaming is perfectly normal_____
4. Unusual impulses in regard to hatred, murder, or sex—
including homosexual ideas—occur *occasionally* in normal people _____
5. Homosexuality is a mental illness, not “degeneracy” _____
6. A person who is mentally ill should be regarded in the
same way as a patient who is suffering from a physical
disease _____
7. Marriage rarely improves emotional illness _____
8. Mental problems are not cured by sexual experience _____
9. There are better outlets than anger or temper tantrums
for “nervousness,” anxiety, or conflicts _____
10. Normal young children have considerable curiosity
about sex _____
11. Even the “ideal child” is occasionally disobedient _____
12. Most emotional illness starts early in childhood _____
13. Chronic drunkenness is a deep-seated psychological ill-
ness _____
14. Emotional difficulties, rather than inherited criminal
tendencies, account for most criminal behavior _____
15. Modern psychiatrists deal with many emotional prob-
lems that have nothing to do with insanity _____

If you wrote “True” to all of these statements, your attitude is correct and modern. The right answer for every one is “True.” If you took a long time to decide on most of them, or if you answered eight or more “False,” your attitudes toward mental hygiene need to be changed. Should you be discouraged? Not in the least! The quiz was made up from statements which a specialist in psychiatry prepared for doctors because he had found that even physicians held many erroneous ideas. Now you can be doubly proud if you answered most of them right!

And even if you were wrong on all of them, it should merely encourage you to read this chapter and learn the right answers. (After all, you did not spend eight years getting an M.D. degree, and many doctors, after those eight years, still did not know all the right answers!) It isn’t easy for us to discard worn-out ideas any more than it is to get rid of those worn-out clothes that clutter up a closet or attic!

This section of the book, on emotional problems, will enable you to replace threadbare ideas and attitudes with ones that will serve you well in solving problems you may have to face in yourself or members of your family. It will tell you about all kinds of mental disorders, how they arise and how some of them can be ameliorated or even cured. It will give you some understanding of *mental hygiene*, which is as important as

knowledge of general body hygiene (which it can influence tremendously). When mental health is understood, and the principles of mental hygiene are applied by parents and teachers, as well as by doctors specializing in this field, current thinking suggests that a great many cases of mental disturbances will be *prevented*, or cured at an early stage.

A word of caution. The information in this section of the book is not intended to make you an "amateur psychiatrist"—one of those justly unpopular characters who know all the answers, "diagnose" people from across the room or on the basis of one piece of information, "psycho-analyze" their friends, and so on. No good psychiatrist would attempt what the parlor amateurs do so blithely. Human behavior is complex. When I give an example, it is only an *example*; and many of my explanations are only given to show you some possibilities. So don't say, "Why, he's talking about Mary" or "That means me," and get upset as a result. It certainly isn't my purpose to alarm you. On the contrary, I feel that this is perhaps the most encouraging section of the book, for tremendous progress is being made in understanding, preventing, and curing mental problems.

When I speak about the outworn ideas to which many people cling, I don't mean that you should discard everything you've ever thought or observed. That might prove to be a case of "throwing out the baby along with the bath water." If your answers to the questionnaire were wrong, it may only be because of misplaced emphasis or a misinterpretation of certain terms. Doctors, like people in all specialized fields from baseball to electrical engineering, use some words in a way that differs a little from the way they are generally used. I shall define some of them as I go along, but if a meaning isn't clear to you, a glance at the Dictionary of Medical Terms (page 821) will help.

First of all, I should explain that in discussions of this kind, doctors give the word "mind" a slightly different meaning from the one that is generally given to it. We don't use it as though it were simply the organ of intelligence, but give it some of the qualities one thinks of as associated with the words *emotions*, *personality*, *nerves*, and *soul*. These meanings are all embodied in the term *psyche* (as in words such as psychiatry, psychology and psychoanalysis).

Then, too, there are many definitions for the word "normal." Unless you and I use the same one, we probably won't arrive at the same answer to any question about "the normal person."

WHAT IS NORMAL?

A dictionary defines this as "in accordance with an established law or principle; conforming to a type or standard," and gives as synonyms:

“regular, natural, standard, model, common, ordinary, typical, usual.”

According to the law, anyone who is able to distinguish between right and wrong is sane; and normal behavior is regarded as responsible behavior. For centuries it was believed that insanity was due to demons. Even today there is a tendency to define as normal that which is in accordance with “what God intended,” so that anything varying from the Gospel is unnatural and abnormal. Some people believe that normal behavior is practically the same thing as abnormal behavior except that it “doesn’t go too far.” Others define normality as being like the majority, (despite the fact that history has shown that a decadent society such as Nazi Germany can be brutally sadistic). Similarly, people often feel that to be normal is to be happy, without taking into consideration the fact that some obviously insane people are “happy.” “Maturity” is another word used as a synonym for being normal, although adolescents can certainly be normal without being mature. However, all of these definitions play some part in describing the word as psychiatrists use it.

We doctors think of a normal person as one who adjusts himself to his surroundings—the world he lives in and the people in it—and also to his own potentialities for living, making realistic efforts to change the world about him, if necessary. By abnormal behavior we mean that which results from an inappropriate or ineffective manner of getting along in one’s surroundings. For example, a person who was afraid of being run over by an automobile might refuse to go outdoors, or he might spend his life in bed; this would solve the problem of his fears, but obviously not in a satisfactory manner. When we examine abnormal behavior carefully, we see that it consists of a technique or set of techniques for adjusting to situations—techniques which are inadequate but are retained because they are in some way satisfying, or at least, more rewarding than anything else the individual has tried.

Because doctors who deal with mental problems use the word normal in this manner, some people believe we tend to dismiss ethical and religious values. They even feel that psychiatrists advocate immorality. It is true that some extremists among the early psychiatrists used to over-emphasize “getting rid of inhibitions,” but psychiatry has long since discarded any such tendency, as you will see when I talk about “inhibitions” a little later. It is not true that we “dismiss” good and evil, or “explain away morality” in our effort to understand everything. (Of course there is some truth to the saying that “to understand is to forgive.”) While we doctors recognize moral responsibility (each in our own fashion), we feel that our contributions, as scientists, are in the area of *understanding* and *explaining* rather than moralizing. I feel strongly that these contributions can and do help people to lead far better and more moral lives.

WHAT IS A NORMAL PERSON?

Although I have explained what we mean by normal, I have not yet begun to answer the first question people usually ask: *What is a normal person like?*

PERSONALITY STRUCTURE OF THE NORMAL PERSON

1. *Realistic Attitudes toward Life.* The normal, emotionally mature adult faces facts whether they are pleasant or unpleasant. For example, he likes to drive his car, but realizes that there are definite dangers attached to driving. Because he is mature, he takes special care to check the brakes, tires, lights, and all the essential parts of his automobile at reasonable intervals. The immature person may say, "Accidents never happen to me," and refuse to take any precautions. Or he may be the other type of immature individual who checks his brakes every day and still loses sleep at night worrying about the fact that "accidents always happen to me."

2. *Independence.* The mature person forms reasoned opinions and then acts on them. He is not reckless or headstrong, and seeks a reasonable amount of advice. Once he has the facts, he is capable of making a decision. He is willing to face the consequences of his decisions.

On the other hand, the immature person often has difficulty making up his own mind. He wants his relatives or friends or business associates to tell him how to proceed. When he is forced to make decisions alone, he may become upset, nervous, "rattled," or even vicious. Many immature people don't want to accept the responsibility of the decisions they have reached, but blame others if something goes wrong, and demand inordinate praise if the decision leads to success.

3. *Ability to Love Others.* The mature adult gets pleasure out of giving love to children, mate, close relatives, and friends. The mature personality overflows with a storehouse of love in the way water flows from a dam to irrigate and make bountiful the surrounding country. Such a person is selective in his love relationships and doesn't need a huge circle of people to be intimate with. On the opposite side, the immature person finds it difficult to love others and wants always to be loved, to be fussed over, and to be the center of attention. If you observe young children, you will notice that they want to be loved and to be the center of all affection. Seldom does a little child show sustained love for others. This is part of normal development in children, but when such traits ap-

pear in adults, they interfere with healthy personal relationships. The adult person expects to give more love to a child than the child returns.

4. *Reasonable Dependence on Others.* A mature person can give a great deal of affection and love, but he also enjoys receiving these things. A good love relation between grownups must be based on the capacity of both partners not only to give love and sexual pleasure, but also to experience pleasure in receiving them. In this way two people build a shared emotional life. The ability to share, to give, and to receive love and friendship indicates that a person is flexible and adaptable.

The flexible, truly strong person will seek a reasonable amount of advice when important decisions must be made. He will accept just criticism about mistakes or faults.

5. *Moderate Reactions of Anger and Hatred.* The normal person gets angry, of course, but he restrains his anger to reasonable limits and doesn't indulge in temper tantrums. At work, or in other situations which he may not be able to control, he may have to curb his temper in the face of petty annoyances because of the "long-term values." The normal person can get stirred to fierce anger when the occasion demands, as enemies of humanity have learned to their own cost. Such anger is a sign of normality. This type of anger reaction is very different from that of the person who goes into a temper tantrum because a store-keeper can't provide a desired item.

6. *Ability to Make Long-range Choices.* The mature person can forego an immediate gratification for the sake of more lasting values. For example, a mature young couple may decide to put off marriage for a few years in order to complete their educations and get started in life. Immature individuals rush into an elopement without thought of the greater happiness which a delay might bring.

A mature student working hard before examinations will refuse invitations to the movies and dances, and will indulge in these pleasures when the work is finished. He foregoes the immediate pleasures for the deferred gratification of making a good showing in his studies. Later, when it is appropriate, he will probably take a vacation and go to dances and entertainments. That would be good judgment and would indicate a flexible, healthy personality.

7. *A Relaxed Conscience.* The normal person accepts responsibility, does his job well, but insists on and enjoys his leisure hours and vacations. He and his conscience are at home with each other. The

poorly adjusted person always feels driven to accomplish things, rarely enjoys his work, and is frequently the unfortunate type who is always worrying during Sundays and vacations about how things "could have been done better." The mature person enjoys his leisure in restful ways so that he returns to work with refreshed strength and interest. He may do many things during his leisure, but he looks upon them as hobbies, not as more work.

8. *Good Adjustment at Work.* A normal person usually likes his work and does good work. He does not change jobs often. When he does, it is on the basis of a realistic appraisal of the job and of the chances of finding something else. He will give up a job when there are health and accident hazards which are not being corrected, or if the rate of pay is substandard. But the normal individual will not change jobs simply because the foreman has a nasty disposition or a fellow worker is difficult to get along with. He doesn't go from job to job, or from city to city, seeking some other type of employment merely because the "other fellow's grass looks greener."

9. *Love and Tolerance for Children.* The mature adult likes children and takes time to understand their special needs. He can almost always take a few minutes off, no matter how busy he is, to build blocks with a three-year-old or to answer the many questions of an older child. (There is more on adult attitudes toward children in Chapter 19.)

10. *Good Sexual Adjustment.* The normal adult makes a good sex adjustment. He or she is not prudish and enjoys the sexual act with a loved one of the opposite sex. Such a person doesn't need additional stimulation from love affairs or prostitutes. The normal adult achieves a pleasantly satisfying orgasm during the sexual act and can relax completely afterward.

Sexual adjustment has broader implications as well. It means accepting oneself as a male or female without conflict about this accident of birth. It includes understanding the special problems of the other sex, and accepting with tolerance and sympathy some of the emotional difficulties these create—in oneself and in others. I am referring to the still-existing "inferior status" of women, and to the "bread-winner" role of men, and the tensions these cause in our excessively competitive business world. Incidentally, this tolerance toward, and appreciation of, those who are different from oneself should extend not only to the opposite sex, but to people of different racial, religious, national, and cultural backgrounds.

11. *Capacity for Continued Emotional Growth.* The ability to learn and grow emotionally is characteristic of the normal individual. This makes it possible to "age gracefully," for understanding increases even though the aging person has reached or passed his prime in other ways.

A friend of mine, reading this description of the normal person, turned to me with a rueful smile, saying, "Anyone who satisfied these qualifications would be quite somebody! *I'm* not like that, and I don't know anyone who is."

Can you think of anyone you know who possesses all of these qualities? Probably not. And that is as it should be; these are goals to seek throughout life. No one is *perfectly* normal, because perfection is seldom reached by human beings.

Perhaps you will see a greater resemblance between yourself and this idealized normal person when I round out the picture. I don't want to give the impression that to be normal you must be a complete conformist, untouched by fears and conflicts.

THE NORMAL PERSON IS HUMAN

Being human, there is a limit to what even the normal person can "take." The well-adjusted person is not absolutely secure from all danger of "cracking up," at least temporarily. In the Army it was fairly clearly established that there was a limit to the number of bombing missions on which even the best-adjusted pilots could go without suffering from what is called combat fatigue. However, the normal men recovered quickly after being relieved of the unbearable tension. Certain forms of stress are difficult for almost anyone to endure; for example, the kind to which mechanics on an airplane base were subjected when they had to give all of their attention, time after time, to saving the planes on the ground from bombs, without being able to fight back or protect themselves. Some forms of pressures can easily be endured by one normal person and not by another. A colleague of mine recently went to a psychiatrist because he was facing a situation he knew would be terribly difficult for even a doctor—the fatal illness of his only child. He wanted help so that *he* could give the best help of which he was capable to his wife and others of their family.

All normal people aren't alike. The reason why some situations are harder on certain individuals than they are on others lies in the fact that human beings aren't like a simple chemical combination. Obviously, all well-adjusted people are not equally intelligent, physically endowed, and talented. "It takes all kinds to make a world," as the saying goes. In fact, you have undoubtedly noticed that there are different personality types.

Different psychiatrists have described them in various ways. Dr. Carl Jung divided people into *introverts*, who are absorbed in what goes on inside their own minds, and *extroverts*, who are more concerned with the things happening outside than they are with their own experiences. Another psychiatrist, Dr. Karen Horney, speaks of three basic character types—those who “move toward people,” those who “move against people,” and those who “move away from people.” These might become, respectively, a successful salesman, a competitive athlete, and a philosopher. Under unfortunate circumstances the same types might produce, respectively, a playboy, a gunman, and a recluse.

Normal people are influenced by unconscious motivations. People suspected that there was an “unconscious” part of the mind before Dr. Sigmund Freud, the great Viennese psychiatrist, made his contributions to understanding its influence and the way it worked in actual cases of emotional illness. People noticed, for example, that they sometimes forgot things that they didn’t want to remember—even though they *thought* they wanted to remember them. They knew that one could fall in love in spite of a conscious intention not to. In short, they knew that “something” went on under the surface of their awareness.

Even the well-adjusted person doesn’t (for example) fall in love in a completely conscious manner, although he isn’t ruled by his unconscious to such an extent that he falls in love with someone he knows to be completely unworthy of affection.

A well-adjusted person may be “afraid” of a snake even though he knows it is harmless. He may go through periods of emotional distress—as, for example, during puberty when he is faced with the problem of tearing himself away from the dependence of childhood and of solving his sexual needs. He, too, is distressed by tensions, sometimes seeking “foolish” ways (such as smoking) to relieve them. He even has periods of depression, for example, when he has lost a dear one, or his health is below par; women may regularly experience a brief “premenstrual depression.”

“ALL BUT THEE AND ME”

“Everyone seems to be more or less peculiar!” you may say at this point. Perhaps that reminds you of the remark the old Quaker made to his wife: “All the world is queer save thee and me, and sometimes I think thee’s a little queer.”

Until fairly recently even the medical profession tended to ignore the people who are “a little queer,” dividing minds into two groups, the normal and the abnormal. Like the law, medicine used to be concerned

only with the sane and the insane. During the last 75 years, however, it has become plain that those divisions are scientifically inaccurate and meaningless. Now doctors have come to see that divisions should be made between those who are a little upset (the "maladjusted," "peculiar," "neurotic," "troubled") and those whose mental condition is such that they cannot function in society.

We do not consider this former group as standing midway between the first (the "sane," "normal," "well-adjusted") and the third (the "insane," "psychotic"). It is closer to the first than it is to the third. Perhaps the difference between the people in Group 1 (normal) and Group 2 (psychoneurotic) can be described as a difference in degree—in *quantity*—while the difference between Group 2 and Group 3 (psychotic) is *qualitative*. We can compare those in the first group to people who possess good physical health; those in the second to people whose illnesses, however severe, involve only a part or a few parts of the body, so that they can usually manage to be up and about; and those in the third group to people with an incapacitating illness affecting the entire body.

All types of human minds can't actually be divided into three groups. I'm dealing with them in that way because it is the most nearly scientifically accurate of any convenient division.

Now, having described the normal mind, I will take up *The Partially Sick Mind* and *The Sick Mind* in the two following chapters.

The Partially Sick Mind

A PERSON whose mind is "partially sick" may be extremely intelligent, successful in his or her career, and able to function responsibly in society. The signs of the illness may not be apparent, or may reveal themselves in such a way that one would not suspect their mental origin—for example, in fancied or *real* physical symptoms. In other cases the illness takes such forms that people call it "lack of will power," "degeneracy," "laziness," "cowardice," and so on—never realizing, for example, how great may be the demands on the "will power" and "courage" of the victim of fears and phobias.

During their studies of the more severe forms of these illnesses, psychiatrists have learned a great deal not only about their cause and cure, but also about *all* human behavior. In this way, great advances have been made in *psychology* (the science which deals with the nature and functioning of the mind) as well as in *psychiatry*.

WHAT IS PSYCHIATRY?

"Psychiatry is the bunk!" a businessman I know informed me at lunch one day. It seems he had mislaid his watch, a gift from his wife, and she had accused him of not loving her. She had just read a psychiatry book, she said, and it explained that people lost things because they wanted to; therefore the loss of the watch she had given him meant that he wanted to get rid of *her*!

Or take an elderly woman who talked to me about a forty-year-old daughter with no social life—she always got sick headaches that prevented her from going out. "My daughter wants to consult a psychiatrist but naturally I won't hear of it," the old lady said vehemently. "There's never been any insanity in *our* family. Besides, he'll give her a lot of ideas about sex."

"Psychiatry is not a science," I overheard a young laboratory worker announce. "And so I don't want to have anything to do with it."

You probably know better than these people did. You realize that the

wife of the man who mislaid his watch had interpreted the psychiatry book too literally (if it was a good one, it undoubtedly merely *suggested* some of the unconscious motives people may have for losing things). You know that the elderly lady was foolish to talk about insanity or worry about the psychiatrist giving her daughter "ideas about sex." You may understand, as the laboratory worker didn't, that psychiatry *is* a science. It is the science of prevention and treatment of disorders of the mind—even though, as in all fields of medicine, every question has not yet been answered. You know that it is possible to accomplish many wonderful things in medicine even before all the questions have been answered; after all, vaccination saved countless people from smallpox long before doctors were able to give a scientific explanation of immunity.

However, psychiatry is a young branch of medicine. Whenever a new field is opened, "fools rush in where angels fear to tread"; so it is only natural that psychiatry at first attracted its quota of individuals with more enthusiasm than common sense—as well as the inevitable quacks and fakes. Since there are also people who avoid anything new, it is not surprising that there are those who look down on psychiatry as the "Johnny-come-lately" of the medical profession. I feel that I can best straighten out some misconceptions about psychiatry by giving you a brief account of its background.

A THUMBNAIL SKETCH OF PSYCHIATRY*

For centuries, mental disorders were problems for the devil-doctors, magicians, or priests. This was logical, for all illness was supposed to be of supernatural origin. The *supernatural theory of mental diseases* persisted long after it was suspected that physical ailments were not caused by forces from the other world. (The word *lunatic*, for example, comes from the Latin word for the moon, which was supposed to cause madness.) Yet even in early days there were indications of some insight into psychology, such as the interpretations of dreams, the treatment of the insane by music, the rituals of mourning for the dead, the confessing of sins, and so on.

As long as people believed that mental disorders were the work of evil demons who inhabited human bodies, the mentally ill were treated with extreme cruelty. Although the supernatural theory has been discarded, some traces of the old attitude still persist.

By the sixteenth century, some connection between the human brain and

* From here to page 243 I give a brief history of psychiatry, and sketches of the leading psychiatrists. Turn to page 243 if you are familiar with this historical background.

human behavior began to be suspected. But it was not until the French Revolution in 1789, that a French doctor, Philippe Pinel, advanced the revolutionary theory that the *insane should be treated as patients* and not as loathsome or amusing monsters. This idea formed the foundation for modern psychiatry, although it did not of itself explain very much.

Soon after this, two other French doctors made great discoveries. Dr. Paul Broca showed that an injury to a portion of the brain (the speech center) caused a man to utter unintelligible sounds, so that he *seemed* to be insane, although he was not. The other doctor, Jean Marie Charcot, showed that he could hypnotize certain patients who would then produce the actual physical symptoms he suggested, such as a swelling of the legs. These discoveries opened the door to an understanding of the relationship between the body and the mind.

Because doctors were learning how to use the microscope, the emphasis during the later years of the nineteenth and the early ones of the twentieth century was placed on studying the *physical* origin of mental disorders, particularly those in the nerves. Rapid advances were made in *neurology* (the study of the nervous system). The theory that all mental diseases had an *organic-structural* origin became popular. A great deal was learned about hereditary defects, head injuries, and bacterial infections. Now it is generally agreed that only a small portion of all mental illnesses can be accounted for in this manner.

In the early years of the twentieth century a German doctor named Kraepelin advanced the *disease-entity* theory, according to which mental diseases differed from one another as much as, for example, measles differs from appendicitis. Although this theory was not very important, Kraepelin did some excellent work in classifying mental diseases.

The *conditioned-reflex* theory was presented by a Russian, Dr. Ivan Pavlov. He discovered that dogs could get so accustomed to associating the ringing of a bell with being fed that saliva would eventually flow from their mouths when the bell was rung, even though no food was present. For a time doctors were inclined to believe that most "peculiar" human behavior could be explained by the theory that it was due to conditioned reflexes—the "conditioning" having taken place so long ago that it was forgotten. Modern psychiatrists are not in agreement about how much this can explain the reactions they observe in the mentally ill.

Toward the end of the nineteenth century, Dr. Sigmund Freud of Vienna discovered that when he hypnotized an hysterical patient, she talked of things about which she obviously had no conscious knowledge. He worked out techniques for getting at this "unconscious material" without resorting to hypnosis. One of his methods consisted of getting the patient to say anything that came into her mind (*free association*). By means of his new techniques,

he worked out what was actually the first explanation of the deep roots and motivation of human behavior. He took into account both unconscious and conscious motivation.

His contributions were invaluable. Even though all of his interpretations may not be universally accepted today, it is true that most modern psychiatry is based on the same general theory to which Freud subscribed, that is, the *functional* theory. This places emphasis upon the patient as a whole—his past life in addition to his present symptoms—the *person* and not just the disease.

SOME SPECIFIC CONTRIBUTIONS BY NOTED PSYCHIATRISTS

Dr. Sigmund Freud emphasized the importance of disturbances of the sexual life in causing neuroses. He developed a comprehensive theory of personality as well as a method of treatment. His *libido theory* included such concepts as that of *infantile sexuality*; also the *Oedipus complex* which means the attraction of the child to its parent of the opposite sex and the rejection of the parent of the same sex; and the *castration complex* which is the fear of the genitals being severed or injured as punishment for the emotions involved in the Oedipus complex.

Dr. Alfred Adler considered sex a less important factor; he regarded man's main problem as the struggle for power in order to overcome feelings of inferiority. The idea of *repressed aggressiveness* and the *inferiority complex* were among his contributions.

Dr. Carl Gustav Jung felt that there was a higher nature in man which conflicted with his instinctive animal side. He felt that this higher nature was part of a tribal or racial "*collective unconscious*," that is, "the unconscious of the human race."

Dr. Otto Rank believed that the baby's painful experiences while being born were a source of neuroses. His major contribution was the development of new and useful techniques of therapy.

Dr. Sandor Ferenczi also contributed new techniques. He emphasized the constructive value of the patient's relationship with the psychoanalyst; the therapist, by accepting the patient wholeheartedly, gave him what children want from their parents.

Dr. Wilhelm Reich contributed, in his early work, to the understanding of the individual by his analysis of character structure—the *personality pattern*. (The value of his later work is highly questionable.)

Dr. Karen Horney stressed the role culture and environment play in causing neuroses, giving attention to the present situation—the problems immediately facing the patient.

Dr. Erich Fromm felt that the significant problems are those of man's relationship to the world which, in its present state, prevents him from being free.

Dr. Harry Stack Sullivan also discarded the instinct theories. He stressed the relationships between people, particularly those between an individual and his mother, father, and others who are significant when he is young. This is the *interpersonal theory*.

Dr. Adolf Meyer, the Swiss-born "father of American psychiatry," had the greatest influence on psychiatry in this country. His psychobiology, also called "common sense psychiatry," stressed the practical approach to the combined mental and physical life of the patient, and emphasized the cure more than the search into the cause. In general, Meyer's methods form the basis for much of modern work with psychotic patients while Freud's form that for dealing with the problems of neurotic people.

By studying the individual as a whole, psychiatrists learned that people have basic needs—involving security, affection, independence, and sexual activity—which vary according to the stage of their development. They found, for example, that a baby is not "a little vegetable" who will thrive as long as he is kept warm and well fed. On the contrary, a baby may become listless and apathetic—and even die through lowered resistance to infection merely because he has received *no* affection. They found that a baby can be upset, even though he is given adequate care, if his mother is always tense or "in a state of nerves."

It was clear that a child has to check (repress) certain impulses because of their consequences; for example, he must learn to check his desire to touch the pretty flame because it will burn his fingers. Certain *inhibitions* are necessary. But if the child's *basic emotional needs* are frustrated, unfortunate repressions and inhibitions result, causing unconscious conflicts. Forbidden impulses are forgotten or excluded from awareness but continue to exert an influence from the unconscious part of the mind. In other words, the child arrives at a solution to his problem that doesn't actually solve it, although it makes things seem bearable. (We do this as adults, when we repress our grief at the loss of someone dear to us, in the hope of avoiding unhappiness.)

Take a four-year-old boy whose normal interest in sex is expressed by comparing his own organ with that of a little girl. Let us assume he is discovered by horrified parents who tell him he's wicked, punish him, and frighten him with threats that the doctor will cut off his penis. From then on, the little boy may indeed "behave properly" by repressing his sexual instincts. Unconsciously, however, they still exist. These unconscious desires conflict with his desire for love and approval, and he feels anxious, afraid, and guilty without knowing why. I don't want to give the impression that the unconscious represents the "bad" side of one's nature which struggles with the good; unconscious drives can be healthy ones.

THE IMPORTANCE OF CHILDHOOD

I could describe countless problems that arise at an early age. They would all be intended to stress the point that a *great many mental illnesses are initiated in this period*—or, at least, that the soil is prepared for them. Psychiatrists emphasize that the child's emotional life—his sense of security, his feeling of being loved, and so on—are far more important to his development than are the factors we call hereditary, that is, the qualities he inherits.

It is for this reason that I have devoted an entire chapter to Our Children's Emotions (see page 388). Every parent or prospective parent should read this. I hope others will, too, because childhood helps to explain adult life.

The development of a normal emotional life is a continuous problem. Childhood experiences are extremely important, but life is never static and everything that happens leaves its imprint. Adolescence is an important period in emotional as well as physical development. That is why *I have devoted a chapter to the problems of adolescence* (see page 436).

Marriage is another great step forward in the development of emotional life. While it is a valuable experience for most people, some are unable to benefit from it or even accept it. I hope every young adult will study the chapter on Emotional Attitudes toward Marriage (page 285).

To return to the subject of this chapter, the *maladjusted person*: as I said in the last chapter, the borderline between the badly adjusted and the well-adjusted individual is not so clear that we can always determine in which group an individual belongs. However, a boundary does exist.

DIFFERENCES BETWEEN THE NORMAL AND THE MALADJUSTED INDIVIDUAL

Everyone has fears, worries, tensions, and emotional discomfort. However, those of the neurotic person have special characteristics.

1. They are usually exaggerated, continual, or of long duration, or they are not realistic.

Here are some examples. Any normal person may be afraid of catching a disease, being struck by lightning, or run over by a car; the neurotic person may be terrified or panic-stricken. The normal person gets over his fear of being hit by an auto when he reaches the other side of the street; the neurotic person starts immediately to anticipate the next time. The normal person may worry about failure in business or in love when he has evidence that things are not going well; the neurotic person

does so when things are going beautifully, for example, interpreting the most casual glance of his loved one at another person as a sign of infidelity.

2. These fears, worries, and tensions prevent the neurotic individual from reacting to his best interests. They interfere with his ability to work and to get along with people.

For example: the fear a normal person experiences on going into battle makes him alert and cautious (i.e., a good soldier); the neurotic person may become panicky and be unable to protect himself. A well-adjusted mother knows her older children face certain risks, but she doesn't refuse to let them out of her sight on that account. A neurotic mother may keep her children with her even though she knows it hinders them from developing a healthy degree of independence. A well-adjusted person may dislike unfair criticism of his work but he'll put up with a certain amount of it if the job is excellent in other respects; a neurotic individual may quit work because he is spoken to in only a moderately critical tone.

3. Neurotic people experience feelings of fear, anxiety, and depression without knowing why. This sometimes makes them fear they are becoming insane. Right here I want to state emphatically that *it doesn't mean anything of the kind*. Quite the contrary, there appears to be some truth to the saying, "The best way to keep from going crazy is to be neurotic!" Of course it isn't the *best* way, any more than the best way to avoid breaking your arm is to keep it in a sling.

In each of these illustrations that I have selected, the explanation of the neurosis lies in the unconscious mind of the neurotic individual. Let me suggest a few interpretations to show how this could happen.

THE TYRANNY OF THE UNCONSCIOUS

Perhaps the person who is terrified of lightning had it impressed upon him at an early age that "God will strike down the wicked." His unconscious mind says, "That means you; you're wicked because you stole apples, or made your mother unhappy, or masturbated." Perhaps the unreasonably jealous woman had been convinced as a child that nobody would ever love her because she wasn't pretty and well-behaved like her sister. Perhaps the person who is afraid of everything had an anxious mother and lived in a world filled with dangers no child could identify.

These children forgot (repressed) the events or ideas that were too painful for them to face. As adults, they no longer remember them. Yet in each case "the song is ended but the melody lingers on." Feelings of

guilt, inferiority, or formless fears “linger on” in their unconscious minds, determining their behavior.

You notice I said *determining*. The unconscious of the normal person is not (or is very seldom) in serious conflict with his conscious desires; but the conscious of the neurotic person is always being forced to surrender to his unconscious. The neurotic person becomes the slave of his unconscious.

Now, it is quite possible for slaves to be contented—if they are submissive, or can get around their masters, or if their masters are consistent and not too demanding. But this isn’t the same thing as being free to make one’s own decisions without any limitations except those imposed by society for the protection of others.

SOME CHARACTERISTICS OF NEUROTIC INDIVIDUALS

As a group, these people are able to recognize reality. They may see it through dark or distorting glasses, but they do see it. They do not have hallucinations, as do some of the psychotic people I discuss in the next chapter. Only *part* of their personality is disturbed. They are all able to function, more or less, in society. That is, they don’t need to be “put away” for their own protection or that of others—although in some of the very severe cases a stay in a good sanitarium may prove helpful. Almost all of these people have a certain amount of insight; they know, although they won’t always admit it, that there is something wrong with them.

Although these characteristics apply in general to people whose minds are partially ill, there are many varieties of disorders from which they may be suffering. Among the most important are the following:

CHARACTER DISTURBANCES

Classed as *neurotic personalities*, people with these disturbances are not neurotic in the full sense of the word since they are not suffering from any of the neuroses I describe on pages 247-249. They have no actual mental illness; yet they are not in perfect health. I sometimes compare them to people who are about 50 pounds overweight and, while there’s nothing specifically wrong with them, are too fat to enjoy perfect health or to be, statistically speaking, “good risks.”

These people have *character problems*—not merely the ordinary problems of life but those stemming from or exaggerated by traits in their characters, such as shyness, timidity, irritability, depression. You know such individuals. Probably you have heard some of the following things said about them:

"Mary would have heaps of boy friends if she could only realize how good-looking she is."

"You get the feeling Jack doesn't quite trust anybody; he always seems so wary."

"Tom's great fun when things are going his way, but he's a very bad loser."

"We really ought to ask Joan because she's so sweet, but she kind of puts a wet blanket on things by being always in the dumps."

"I bet Dick'll be the last one to get a raise even though he's the smartest one in the office."

"It's a shame Dotty flies off the handle the way she does; she feels awful about it afterwards."

"Anne's so jittery she makes me nervous."

The world has always realized that these people are "their own worst enemies." But not until recently, with the development of psychiatry, have we begun to understand why, and (as I'll explain on page 251) how they can be helped to lead fuller, more useful, and happier lives.

NEUROSES (PSYCHONEUROSES)

1. *Anxiety neurosis*. In this condition a person experiences episodes of anxiety which vary from mild uneasiness to panic. Sometimes they manifest themselves by physical signs such as sweating, dizziness, diarrhea, difficulty in breathing, a pain in the heart. The individual may feel extremely tense and irritable; he may awaken in the night in a state of terror. The characteristic feeling is one of "anxious expectation," the way one normally feels when something dreadful is about to happen, except that there is no idea as to what the dreadful thing might be.

This state is often associated with a fear of losing love, as, for example, when there is conflict in the unconscious mind between a desire to hurt the loved one (perhaps to get even for having been hurt) and a desire to win that person's love.

Sometimes the anxiety is "shunted off" by associating it with the situation in which it was experienced. That is, if the anxiety first occurred in an elevator, the individual may "blame" the elevator, which he then fears and avoids in the hope of avoiding the anxiety.

Some psychiatrists feel that there is no such thing as a *pure anxiety neurosis*.

2. *Phobias*. These are divided into *common phobias*, or exaggerated fears of things most people are afraid of, such as death; and *specific phobias*, or fears of things that aren't in themselves frightening, such as open fields. Psychiatrists usually exclude fears resulting from a forgotten experience, such as an adult's fear of touching an electric cord be-

cause he was badly shocked by a defective one when he was little. Phobias are usually rooted in guilt, in the fear that, having been "bad," something is bound to "get you."

Included in the almost endless list of phobias we find: *acrophobia*, the fear of high places; *agoraphobia*, open spaces; *aichmophobia*, sharp and pointed objects; *anthropophobia*, of people; *astrophobia*, storms; *batophobia*, falling objects; *claustrophobia*, enclosed spaces; *climacophobia*, falling downstairs; *dromophobia*, crossing the street; *hypnophobia*, fear of sleep; *kleptophobia*, of stealing; *mechanophobia*, of machinery; *monophobia*, of being alone; *mysophobia*, of dirt and contamination; *necrophobia*, of the dead; *nichtophobia*, of the dark; *pantophobia*, of everything; *potamophobia*, of running water; *phagophobia*, of swallowing; *syphilophobia*, of syphilis; *topophobia*, of situations (stage fright); *xylophobia*, of the forest; *zoophobia*, of animals.

3. *Hypochondria*. In this neurosis the mind's illness is expressed through a preoccupation with body functions or organs. The patient is afraid of, or believes he suffers from, physical disease. He notices body sensations, such as normal fatigue, that do not concern or bother other people. There is no physical cause for this condition. However, telling him he's all right physically won't cure the hypochondriacal attitude.

4. *Conversion hysteria*. This differs from hypochondria in that the mind's illness is expressed in a physical symptom or symptoms, which, although not *real* in one sense of the word, are certainly real to the patient. Hysterical paralysis is one example. A soldier undergoing a severe conflict between his desire to be brave and his desire not to be killed, finds his legs suddenly paralyzed. He is not "faking"—he actually feels nothing when pins are stuck into his legs. However, there is absolutely nothing wrong with his nerves—usually the loss of sensation is not even anatomically possible, a section of one nerve being "dead" while other sections beyond the "dead" point remain sensitive. When the conflict is resolved, either by circumstances or within the soldier himself, his paralysis vanishes.

5. *Obsessive-compulsive neurosis*. This causes people to perform actions without knowing why, or without wanting to perform them. The impulse stems from an idea or set of ideas that have no relationship in the individual's conscious mind. For example: a person always has to put on a certain undergarment inside out. This is similar to the way some of us feel about having to "touch wood." It is a sort of ritual, an appeal to magic powers. However, the normal person who touches wood does so as a kind of joke because he has been told it is lucky; but it is no joke to the victim of such a neurosis. He performs his rituals because he is extremely insecure. As a child, he turned to his own "magic" in a desperate attempt to cope with problems too great for him to handle.

6. *Neurasthenia*. Literally, this word means nerve weakness. It was once believed that the nerves in the brain could actually get tired, and "brain fatigue" would result. Now we know that, like hypochondria and conversion hysteria, this is a product of the patient's psyche. It is real to him, even though it is medically and scientifically "impossible." The patient honestly feels and *is* too weak or tired to get out of bed, or even to think coherently. He can sleep for periods that would be impossible for a well person, or simply lie for hours doing nothing. Yet he is not physically ill. Resting doesn't cure him, but solving his problems does.

7. *Neurotic depression*. It is not neurotic to be unhappy or depressed under certain circumstances—for example, when a beloved person dies. It is certainly quite normal to experience *grief* and to mourn such a loss.

However, well-adjusted people "work through" their grief so that they can resume their activities and reestablish social contacts. They do not grieve week after week to the point of *melancholia*. This is not because they are insensitive or superficial. On the contrary, their grief is usually more profound than that of badly adjusted people. But when the latter suffer from neurotic depressions, they feel helpless because of their loss or perhaps even because of a change; their low self-esteem convinces them they can never cope with such situations. These neurotic depressions are so closely bound up with feelings of inadequacy and insecurity that they can be brought about by events which well-adjusted people accept as "all in the day's work." Yet such depressions cause great suffering.

A number of women experience, to some degree, a *premenstrual depression*, which I discuss on page 765; and *menopausal melancholia*, page 767.

PSYCHOSOMATIC ILLNESSES

In recent years we have heard a great deal about psychosomatic illnesses (*soma* means body). These are different from conditions such as those I described under 3, 4, and 6 which vanish completely when the psyche recovers.

I can best make this clear by describing an ulcer of the stomach. Observations were made by two physicians (S. Wolf and H. Wolff) who were able to watch the digestive processes of a patient who, because of a previous accident, had to be fed through an opening made directly into his stomach. They could actually see that inflammation occurred when the patient became angry or upset.

When food is present in the stomach, digestive juices are put out to "work on" (digest) it. However, certain emotional reactions can also

stimulate the flow of these juices. If there is no food in the stomach, the acid juices may irritate the stomach itself, sometimes eventually causing an ulcer (open sore). Now, it is important to remember that this ulcer exists as an organic disease of the stomach. Unless it is treated by medicine and diet, it may cause a hemorrhage or it may perforate. However, unless the emotional tension is relieved, the patient won't be giving his ulcer its best chance to heal; and, of course, he'll have to continue his diet and medicine in order to minimize the risk of getting another ulcer. Thus, *psychosomatic diseases require treatment of both the body and the mind.*

In addition to ulcer of the stomach and of the duodenum, the following are regarded as diseases in which emotional factors may play an important part:

- migraine headache
- mucous colitis
- ulcerative colitis
- asthma
- high blood pressure
- hyperthyroidism (overactive thyroid)
- arthritis and rheumatism

Undoubtedly others will be added to this list. As yet the evidence is not as clear-cut in any of these diseases as it is in the case of certain ulcers. We do not know, for example, to how great a degree a patient's asthma is due to his having inherited an allergic constitution and how much to his having emotional problems. However, we do know that asthmatic patients generally improve far more rapidly when their emotional difficulties are relieved at the same time that they are being desensitized to the pollens or other allergens which set off their attacks of asthma. Incidentally, ACTH and cortisone (see page 101) often affect the personality (as well as the rheumatism or arthritis) of patients who are taking these medicines. This may provide a key to open new doors in the field of psychiatry.

THE PEOPLE DESCRIBED IN THIS CHAPTER CAN BE HELPED

Probably I am saying this just in time to keep you from being completely discouraged by what you've been reading! It is depressing to hear about all these unhappy, frustrated people. But fortunately, there is a bright side. *All the people I have been talking about can either be cured or helped.*

THERAPY (TREATMENT)

Although the word therapy means *treatment*, I like to remember that its original meaning includes the idea of *service*.

There are many kinds of treatment for mental ailments. The most effective for the people I have been discussing in this chapter is *psychotherapy*. It means treatment by psychologic measures. The term covers everything from the simplest "spilling out" of troubles to a spiritual advisor or wise friend, to the long, involved process of psychoanalysis.

Almost every doctor practices some form of psychotherapy, sometimes without knowing it. In dealing with a patient who has an exaggerated fear that he is ill, the doctor's examination, explanation, reassurance, and firmness are forms of psychotherapy. Or, when he helps a tense and nervous person to find a hobby—that is psychotherapy, too.

FORMS OF PSYCHOTHERAPY

GUIDANCE AND COUNSELING

There are times when simply *putting one's problems into words* helps to clarify them and make them seem less alarming. It may reveal what the *real* trouble is. Though this may be painful, it usually is encouraging to know where one stands.

Confessing one's weaknesses, failures and sins is valuable, provided the person to whom they are confessed understands their importance (however trivial they may actually be). He must also be able to make the person who is confessing feel that he is not condemned, but that he is still worth while, despite his faults and frailties. Doing something constructive to make up for his past is far better than brooding about it.

Receiving information is sometimes most useful in equipping an individual to solve his own problems—especially if they were due, wholly or in part, to ignorance or misinformation.

These are some of the techniques utilized in various forms of counseling—which include marriage counseling (see page 303), child guidance (see page 404), and vocational guidance (see page 186). These methods can be successfully employed by doctors in general practice, and also by clergymen, social workers, and others who do not have medical degrees but have been trained in this work. They know the types of problems that can benefit from counseling, and when more expert help is required. At one time there was a fairly sharp division between the *directive* and *nondirective* approach to this type of therapy. In both forms, the individual was encouraged to talk about his problems, but in the *directive* he was told what he should do, and in the *nondirective*

he was never given any advice. The present tendency is to combine the two methods, being careful not to give too much advice, since this does not help the individual to become independent, yet at the same time realizing that he is apt to become confused if he gets no advice at all.

ADJUNCTIVE THERAPIES

The most common of these is *occupational therapy*. This term is apt to make us picture insane people weaving baskets. Actually, it means far more than providing methods of relieving tension. People whose emotional problems are associated with the fact that they do not feel useful (perhaps because of old age, ill health, or lack of opportunity) are often tremendously benefited by doing something that makes them realize they are creative, successful, and independent—on even a small scale. *Sports, diversions, and hobbies* make many people happier and more relaxed simply because they are enjoyable. They, too, bring with them the benefits of increased confidence in one's capacities, including the capacity to have meaningful social relationships.

"REST CURES" AND HOSPITALIZATIONS

A "rest cure" in a pleasant sanatorium used to be widely recommended for neurotic patients. A little later, "health farms" became popular. Today this is suggested less often, since the patient has to adjust to the world as soon as he is discharged. It may be necessary if the neurotic individual is physically run down, or if the conditions in his or her home are unsatisfactory. This doesn't necessarily mean that there's anything bad about the home itself; the matter involves the relationship between the home situation and the specific problems of the patient.

MEDICINES

Medicines such as the barbiturates are given in some instances to relieve tension; stimulants including Benzedrine are occasionally prescribed. They should be taken *only* on a doctor's orders. As a general rule, they are given in connection with other treatment, but a doctor may find them sufficient under certain circumstances: for example, he may give barbiturates to relieve the tension in a person awaiting news of a dear one who is critically ill.

NARCOSYNTHESIS

Medicines (such as sodium amytal) are used to put the patient into a sleeping state, so that he will be able to realize, and tell, what is troubling him. It is similar to treatment by hypnosis. It has been used successfully on soldiers who "cracked up." This was often found to be due to guilt feelings connected with the death of a comrade or comrades; the incident that caused these feelings had been "forgotten" (being too deeply disturbing) but was recalled during the sleepy state. Once brought into the open, these feelings could be coped with.

FORMS OF PSYCHOANALYTICAL THERAPY

Freud was the originator of psychoanalysis. There are very few psychoanalysts who practice it today exactly as Freud did. On the other hand, there is no psychoanalysis that does not derive from him. Nevertheless, we usually speak of *Freudian* and *non-Freudian* psychoanalysis. An important difference lies in the fact that Freudian psychoanalysis usually consists of five hourly sessions a week over a period of several years, whereas in the non-Freudian forms, shorter, less frequent, and less protracted sessions are considered sufficient. In the latter form, a decreased emphasis is placed on free association and more on the immediate situation of the patient and his relationships with others.

Psychoanalysis. This process consists of (1) uncovering the unconscious forces influencing the patient, which he cannot, simply by will, bring into his consciousness. The patient does this by "free associating" (saying anything that comes into his head), by telling about his dreams, and so on. The psychoanalyst makes this as easy as possible, by having the patient recline on a couch where he is scarcely aware of the doctor's presence, and by prompting him with an occasional question, such as "What does that make you think of?"

In the course of these sessions, *transference* takes place. That is, the patient tends to react toward the psychoanalyst in ways that he reacted, or still reacts, to important figures in his life, usually his parents. Because the psychoanalyst is a neutral sort of figure, the patient can see his own patterns of reaction. For example, a patient might be able to rationalize his fear of his neighbors, John Jones and Bob Brown, by saying "Jones is after my job and Brown is after my wife." In psychoanalytic sessions, unable to find a "reason" for his similar fear of the psychoanalyst, he may then discover that it springs from his unconscious mind. He might later learn it was actually a concealed fear of his father, stemming from childhood days.

(2) Once the unconscious material has been brought out, the patient begins to feel relieved. Insight makes him stronger, his unconscious less powerful. He can then begin reacting in a new way.

Anyone who has been psychoanalyzed will probably say at this point, "It sounds quick and easy when you tell about it—but believe me, it isn't. Reacting in a new way is a long drawn-out process. At first everything went fast; I felt as relieved as I would if a boil had been lanced. But the rest of it took a long time."

That is quite true. The person who undertakes psychoanalysis has usually spent many years reacting in the old way, and habits are not easily changed even when one understands how they came about, and wants very much to change them. When you've been on your knees for years, it isn't easy to learn to walk on your feet!

Psychoanalytically oriented psychotherapy ("Brief therapy," "analytic interviews"). While employing some of the techniques of psychoanalysis, these forms of therapy are much shorter. This is not only for convenience, but because it is felt that they do not encourage the patient to become dependent on his analyst (or his sessions with him) but to do the work on his own. Brief therapy may be used where psychoanalysis would not be helpful or feasible.

Group therapy. Usually four to ten patients are treated during the same therapy period. This method is still in an experimental stage. Some psychiatrists combine it with individual sessions, others use it alone. It is considered valuable because the patients react to each other as well as to the doctor, and because their self-confidence is increased by being with people whose problems are like their own. For example, obese people who overeat for psychological reasons (see page 50) often respond well to group therapy. Some of its principles are used successfully in *Alcoholics Anonymous*.

Play therapy. This is a form of psychotherapy adapted to children. Anyone who has tried to help an emotionally disturbed child, knows how hard it is to get him to talk about his problems. Play therapy provides a solution. The child reveals himself, far better than he could by talking, when he plays with toys and acts out his fantasies. The therapist helps him "get things out of his system," accepting him warmly as he is, and guiding him toward the solution of his problems. Since these are related to the way he is treated at home, play therapy is usually combined with some form of therapy (often group therapy) for the parents.

Some of these forms of treatment take longer than others, and require a greater degree of professional training. I shall not attempt to say which forms will be of most benefit to various types of people who need help. I think you'll see why if I draw a parallel from the field of surgery.

Lancing a boil is a simple surgical process as compared with correcting a congenital dislocation of the hip. Your family doctor would probably feel quite competent to handle the first, but not the second. Yet the person with the boil may be suffering acutely, while the person with the congenital dislocation may get along quite well. In other words, the distress caused by a condition does not always indicate how long and complicated a method is necessary to relieve it, or whether it should be undertaken only by a specialist.

I have known soldiers who were emotionally very badly disturbed but who recovered after only a few sessions, such as those I described, under narcosynthesis. I also know some parents who were very much concerned because their daughter seemed to be "on the verge of a nervous breakdown" when they visited her at college. (Incidentally, "nervous breakdown" is not a term doctors use, as it has no precise meaning; some people consider it a polite way of saying "insane" while to others it describes any emotional illness that comes on suddenly.) As I learned later, this girl had fallen very much in love and wanted to get married, a desire that was in conflict with her wish to complete her education—which she knew meant a great deal to her parents. Her hesitation precipitated a quarrel with her sweetheart who said things that hurt her badly. Angry at him, she unconsciously blamed him for the predicament she was in, yet she loved him intensely. She began to experience anxiety feelings. Fortunately, she discussed her problem with a very fine clergyman at college. As she was basically a well-adjusted person, she quickly recovered from this temporary *situational neurotic condition*, and was able to face the real problems confronting her and her young man.

Both the girl and the soldiers I described were in acute distress, yet found relief quickly. In the case of the girl, no doctor was required.

The next case can, I think, be compared with that of a person with a congenital dislocation of the hip.

George Gray was an extremely intelligent man in his forties, the owner of a successful business established by his father. An early marriage had terminated in divorce. I had met him several times at the home of some mutual friends where, on one occasion, we had talked about psychoanalysis.

Some years later he told me that, following this discussion, he consulted a psychiatrist who recommended that he be psychoanalyzed.

Like others who had known Gray slightly, I had no idea that there was anything wrong with him. Yet he had been suffering from a well-concealed "emotional dislocation." To put it briefly, he was extremely lonely but unable to establish any close relationships with other people, especially of the kind that might lead to marriage, although he considered marriage desirable. His fears and suspicions of people had reached the point, he said, where he would refuse invitations he wanted to accept, walked or took taxis because he dreaded being close to people in the subway, and found it increasingly difficult to have dealings with his business associates.

"My psychoanalysis has taken five years, but it's worth it!" he told me enthusiastically. "I can't tell you how different, how much better, my life has been since I no longer feel the way I used to—as though I was living on enemy territory and had to be constantly on guard."

I mention these cases to show you that the form of therapy required depends on many things: on the individual and how deep-rooted his problems are, and also on the goal that is desired. In some cases a cure will be rapid since eliminating a few symptoms is the aim, as, for example, in the case of a person who is well-adjusted except for a recent tendency to insomnia. In other cases a basic change in attitudes is essential. Only a qualified person can evaluate the situation correctly.

DON'T BE RELUCTANT TO SEEK HELP

When people fail to ask for help, or refuse to accept it, I have found that it is usually for one of the following reasons:

1. *Some people lack information, or are misinformed about mental illness*, particularly the milder forms. I've often heard them say such things as: "I think it's right to go to a doctor if you're crazy, but I'm not, and I should be able to help myself. I got into this state and I ought to get out of it by using my brains and my will power."

I appreciate these feelings. It is admirable to want to solve one's own personal problems. However, it is even more admirable to admit honestly that one isn't always capable of doing it alone. Please remember that the psychiatrist doesn't solve your problems *for* you; he can only help *you* to solve them. I won't argue with you about whether you "should" have taken some other course along the road of emotional development, rather than the one which "got you into this state." But I do want to remind you of the fact that you probably began to get off the course when you were very young. If a child injured his physical health you wouldn't insist he ought not to have medical help when he was an adult just because "he has only himself to blame!" The thing to remember is that you have lost

your way, and that the psychiatrist has a map to help you find it again. Don't feel it is your duty to spend years trying to find it by yourself when your talents and ability should be spent in making a good life for yourself and others, particularly your children.

2. *Some people are afraid of help.* Why? Well, imagine a young savage who breaks his ankle while he is alone in the jungle. His life is in danger, his suffering is intense. But he makes a crude cast for it; he can get around; and eventually it ceases to hurt very much. Many years later he learns that his ankle can be repaired. By now he doesn't want to part with the cast; he has grown accustomed to it, even proud of it because it makes him different. Having it removed will be a lot of trouble and will probably hurt. Besides, there is no guarantee that his ankle will be absolutely perfect.

This was the attitude of a patient of mine who happens to be homosexual—although of course he did not express it in those words. I told him honestly that it might be too late to "guarantee" a complete cure. But I urged him to see a psychiatrist, trying hard to make him realize how much better life would be if he didn't have to carry with him, as the savage carried the cast, a heavy burden of guilts and fears.

There is no reason to be frightened if you think you resemble any of the people I've described in this section more than you resemble the well-adjusted individual in Chapter 11. On the contrary, if you do need help, you can get it, and be better off than you imagined possible. Getting rid of your "cast" will be no hardship when you've reached the point where you don't need it any more!

3. *Some people don't know they need help.* I want to caution you against trying to convince anyone that he or she needs help. This is difficult at best; and there is a real danger that you might be talking to someone with a serious mental illness such as those I describe in the next chapter (in which I discuss what you should do in such cases—see page 275). Talk the matter over with a responsible person who has had some training or experience in this field, such as your doctor or clergyman.

If someone comes to you because he or she is disturbed or has an emotional problem, don't try to solve it on the basis of the information I've given you. The best thing you can do is to tell your friend in a tactful, natural manner that trained help is available, with some suggestions (which I give on the next page) about how to find it. If someone you know well and believe to be maladjusted tries to get you to assure him that he is "perfectly all right," be reassuring on the question of sanity. But be honest. Explain that you aren't any more qualified to decide about questions of mental health than you are about physical health. Recommend his talking to his own doctor or to a psychiatrist, making it clear

that you do this in just the way that you'd suggest his having a chest x-ray taken to detect possible early signs of tuberculosis. In trying to help such a person—or in any dealings with a neurotic individual—remember that he feels insecure, unwanted, and inferior, regardless of the front he may assume. Accepting him warmly as a human being with potentialities as well as problems is genuinely reassuring (as it is to a well-adjusted person, too).

The *psychopathic personality* is usually convinced that not he, but everyone else, is out of step. (I describe this group of people in the next chapter; it actually belongs in a special category, rather than with the partially sick mind or the sick mind.) These individuals seldom accept help and, being legally sane, cannot be compelled to have treatment. Unfortunately they can do a great deal of damage to their children and others who have to live with them. I think anyone, however well adjusted, who has to live with such a person should see a psychiatrist in order to obtain guidance in minimizing the difficulties of the relationship and to keep the home situation as satisfactory as possible.

4. *Some people consider psychiatric help too expensive and too much trouble.* They would be reconciled to spending time and money to cure themselves of tuberculosis or in order to have a surgical operation, such as the removal of a tumor—especially one that might become cancerous. Surely it is worth while to invest the same amount of time and money to overcome a long-standing, crippling emotional illness! I can't emphasize too much the fact that such an illness—even when the individual suffering from it feels he can "take it"—can have a serious effect on others, especially the children of such a person. Also, it is unwise to put off seeing a doctor to save money, because delays usually increase the amount of treatment that will be required.

However, it is true that some people just don't have the money for psychiatric treatment. I'll discuss that in the following section.

HOW TO FIND PSYCHIATRIC HELP

Consult your doctor. Make mental health a part of your health program of regular checkups as I have suggested (see page 543). Don't hesitate to talk about yourself—your real self—to your doctor. He will be as interested in your emotional problems and symptoms as he is in the fact that you had scarlet fever and pneumonia as a child.

Often your family doctor himself can help you. Pent-up emotions are sometimes released in only a few interviews, especially if they are due to unusual stresses and strains of recent development. Many general prac-

tioners are qualified to provide some of the forms of psychotherapy I have described. Medical schools teach psychiatry as a major part of the doctor's training.

However, do remember that physicians are human, and we are not all emotionally constituted to be able to help with all the kinds of problems our patients face—even if we had the time. Try to size up your doctor. It is important for you to find someone with whom you will be personally in sympathy. Give your doctor a chance, but if you find you aren't going to "click," you have a perfect right to find someone else. Few doctors will be unduly sensitive about this. The best psychiatrists realize that it is not possible to establish a good relationship with every patient. Knowing how important this is in the success of the treatment, they sometimes even suggest that a patient change to someone else if they don't happen to be personally compatible.

Usually your own doctor can find a good psychiatrist for you in the same way that he does a good specialist in any other field. He may suggest that you see a psychoanalyst or other therapist who does not have the degree of M.D. but who usually has a Ph.D. in psychology, and is a member of the American Psychoanalytic Association.

Your doctor or the psychiatrist may recommend a psychiatric social worker, a clergyman trained in counseling, or a marriage counselor, if he feels they are competent to help you; or he may suggest one to supplement his treatment.

NEVER accept treatment for an emotional difficulty from an advertising "psychologist" or "psychoanalyst." My warnings about quacks (see page 533) apply particularly to the field of mental difficulties.

Your county medical society will supply you with the names of specialists in psychiatry and psychoanalysis who have been awarded diplomas by the National Boards which examine and certify specialists in the various fields of medicine.

Clinics at the large hospitals and medical schools, and mental hygiene clinics operated by various social agencies, can often give you therapy you might otherwise not be able to afford.

At the end of this part of the book (see page 279) I give the names and addresses of various organizations (national and state, private and government) working in this field. State Mental Health Associations usually provide valuable assistance, including information about lectures and discussion groups on mental health.

In specific instances, the following organizations may be helpful:

AMERICAN ASSOCIATION OF MARRIAGE COUNSELORS, 270 PARK Avenue, New York 17, N.Y.

THE NATIONAL COUNCIL ON FAMILY RELATIONS, 5757 Drexel Ave-

nue, Chicago 37, Ill. (This service agency publishes a monthly journal, *Marriage and Family Relations*.)

ALCOHOLICS ANONYMOUS, (National) Box 459, Grand Central Annex, New York 17, N.Y.

THE NATIONAL COMMITTEE ON ALCOHOLISM, 2 East 103rd Street, New York 29, N.Y.

THE NATIONAL SAVE-A-LIFE LEAGUE, 505 Fifth Avenue, New York, N.Y. (This organization offers help to people who consider suicide a way out of their difficulties.)

PSYCHOTHERAPY IN RURAL AND SMALL COMMUNITIES

I realize that your difficulties will be very much greater if you live in a rural community or small city rather than a large one. You may be lucky enough to have a family doctor who is interested in emotional problems and capable of handling many of them. You may be close enough to a medical center or large city to drive over once a week, or once in two weeks, for treatment by a specialist or at one of the hospitals or clinics there. With modern transportation it is usually possible to get to a medical center if you have enough determination to do so. This is not easy, of course, for someone who is working or tied down with young children. In such cases you have to use all sorts of ingenuity in sizing up the possibilities for treatment in your own community. Talk the situation over with your doctor, your county health officer, or your clergyman. All of them should be interested in emotional problems and emotional illness if they are doing their jobs properly. If they cannot help you, write your State Mental Health Association (see page 280) explaining your problem; they may be able to help in some way, perhaps by recommending a book on mental hygiene that deals with the type of situation you face. If it is impossible for you to seek any help outside your community, it may do some good to talk to one of your friends who is a *trustworthy, sympathetic, and well-adjusted person*. This is much less satisfactory than talking to someone who has had training, but it is often better than keeping all the tensions bottled up within yourself until they reach the explosive point.

NEW HORIZONS

I hope this chapter has broadened your understanding of "the troubled people," and how psychiatry can help them to achieve peace of mind and break the chain that makes people visit upon their children the mistakes (*not* sins) of their own parents. I hope, too, that you have

caught a glimpse of the possibilities the future holds for us, individually and collectively, when our energies are no longer dissipated in the squirrel cage of maladjustment. Then we can go ahead as normal, mature people, to solve the real, and fascinatingly complex, problems of living in the modern world.

CHAPTER 13

The Sick Mind

YOU MAY hesitate to read this chapter because anything having to do with “insane” people makes you feel uncomfortable. If you feel that way, don’t let it worry you, because it is a perfectly normal reaction. And don’t worry, either, if you find a certain fascination in reading about these things; that, too, is normal. Almost everyone reacts in one of these ways when first coming in contact with psychotic people—in books or in real life. Just remember that here, as in so many instances, the light of honest information will dispel the mysterious shadows.

PSYCHOPATHIC PERSONALITIES

I shall deal with the group of people included in this general category in this chapter, although they do not actually belong here, but in a chapter of their own.

These people have a good sense of reality, yet they may have abnormal ideas and behavior patterns. For example, persons with psychopathic personalities may bring one lawsuit after another because they feel, without justification, that they have been wronged; yet they do not suffer from true *paranoia* which I describe on page 269. They may lavish all their love and affection on a pet animal, indifferent to the needs of friends and relatives. Occasionally they can be quite charming. Often, if they do something wrong, they are “sorry,” and feel that ought to end the matter even though what they did caused a great deal of damage. This is not due to insincerity but to the fact that their own emotions are extremely shallow. They don’t seem to learn from experience, probably because experiences do not affect them very much. Certain kinds of criminals belong in this group.

ALCOHOLISM AND DRUG ADDICTION

Some psychiatrists feel that alcoholics and drug addicts are not, strictly speaking, “psychopathic personalities.” However, these people differ

from other maladjusted individuals in that they have turned to something *outside* themselves to find the characteristic "inadequate but temporarily satisfying solution" to their problems. As in the case of other maladjusted people, this does not solve their problems. But, in addition, they face the problems that result from excessive drinking or from taking drugs. In advanced cases, their physical condition is very poor; in fact, deterioration often sets in. In many cases, hospitalization is necessary if a cure is to be effected.

SEXUAL PERVERSION (DEVIATION)

I want to make it clear that we doctors do not include among the perversions all forms of sexual activity that vary from the usual. Broadly speaking, we consider a man or woman normal if he or she derives the highest sexual pleasure and satisfaction from the insertion of the male genital organ into that of the female. (See Chapter 14.)

Deviations, as doctors prefer to call them, are emotional illnesses, maladjustments or immaturities which reveal themselves in the individual's sexual behavior. People used to feel that the individuals who performed such acts did so because they were too weak to exercise will power, or for some similar reason. At present, psychiatrists are not in entire agreement regarding the exact cause of sexual deviations. However, it is generally accepted that such behavior results from emotional difficulties which must, if possible, be corrected—while at the same time the actions of deviates must be controlled in order to prevent them from harming themselves or others.

Right here I want to remind you that mature people often carry about with them certain "holdovers" from their childhood. You may, therefore, find in yourself traces of some of the sexual deviations I shall describe. Don't decide, for that reason, that you are perverted!

Let me give you an example. A Peeping Tom who gets his greatest sexual pleasure from watching a woman undressed, or undressing, or a couple engaged in sexual actions, is undoubtedly maladjusted. (A woman, too, may be a "peeping Tomasina!") Perhaps, in his childhood, Tom had a shocking experience connected with his parent's sexual relations, or perhaps he had been so strongly convinced of the wickedness of sexual intercourse that he could not permit himself to be involved actively in such a thing, but had to get his pleasure as an "innocent bystander." This does not mean, however, that you or I are perverted if we have not entirely outgrown our childish fascination in the forbidden. Most men, no matter how mature, find the glimpse of an accidentally revealed shapely limb more exciting than the extensive areas of the feminine form which are frankly displayed by a bevy of girl athletes!

Deriving the highest, or only, sexual satisfaction from watching or peeping is one form of sexual deviation. Here are some of the others:

Homosexuality. This term was formerly applied only in the case of people having actual physical relations with members of their own sex, but it is now used to include those whose deep emotional attachment (that is, "love"), whether or not it is sexually expressed, is possible only with a member of their own sex.

In certain rare instances homosexuality is due to glandular malfunction. Usually, however, it is of psychic origin.

A number of theories have been advanced to explain homosexuality; but there is fairly general agreement along the following basic lines.

Children normally tend to identify themselves with the parent of the same sex; a little girl wants to be like (and to rival) her mother, a boy, his father. If, for some reason, the identification is with the parent of the opposite sex, the child may be oriented in the direction of homosexuality at an early age.

Homosexuality may also come about in another way. During a certain period (usually shortly before adolescence and in early adolescence) children prefer members of their own sex. Boys look down on girls, have male heroes, and enjoy being together, while girls "detest" boys, have crushes on girls, and love some "best friend" intensely. With the coming of sexual maturity, their sexual drives are, not always without conflict, directed toward members of the opposite sex.

During this difficult period, unfortunate experiences may have a devastating effect on certain young people, namely those who have emotional problems. These experiences, whether subtle or obvious, form a barrier on the road of normal sexual development. Homosexuality is a detour on that highway, and some people never find their way back to the main road, especially if their homosexuality has brought additional problems of guilt and fear to confuse them.

Homosexuals are, as a rule, lonely, unhappy people. They must not be regarded as wicked, although every effort must be made to keep them from injuring others who would otherwise find the road to a normal sex life.

"Amateur psychiatrists" have done a great deal of harm by speaking glibly about "latent homosexuality," "bisexuality" and so on. I hope I can prevent them from causing you needless worry by stating emphatically that (1) A homosexual experience (or experiences), especially in adolescence, does not mean that an individual *is* homosexual; and neither does a homosexual dream or fantasy. (2) There is a certain amount of basic homosexuality in the normal individual, as well as some hold-overs from the period during which one preferred the company of

one's own sex. (A high-school girl expressed this when she said to her mother, who was a friend of my wife's, "I'd ever so much rather be with girls except for the fact that men are so attractive.") (3) Homosexuality is a complicated problem, and in itself is only *one* factor of the maladjusted individual's personality.

Exhibitionism, or the act of revealing one's body, usually the genital organ. This is, in its essence, similar to "peeping." A certain amount of "showing off" is normal. This is not to be confused with the exhibitionism of the maladjusted individual. Such a person may be attempting to reassure himself against fears of sexual inferiority; or the maladjusted one may be expressing defiance toward a supposedly hostile world by shocking people in this manner.

Narcissism or self-love. This is quite different from *self-respect*, and from the satisfaction which normal men and, more particularly, women, derive from looking well. The term comes from the name of a Greek youth who, according to the myth, saw his own reflection in a pond and was so enamored of it that he fell in and was drowned while attempting to embrace himself. Most children go through a period of being attracted to their own images in a mirror, stating frankly, "You're pretty" or "I love you." People who do not outgrow this stage are often basically so insecure that they feel no one else will ever love them. This exclusive preoccupation is frequently accompanied by a preference for masturbation to sexual intercourse. Such people are incapable of loving anyone else. They may marry for money to spend on the beloved person—namely, himself or herself.

Nymphomania and satyrisms, or the excessive desire for intercourse in a woman and a man. These conditions are rare. Although the terms are often applied to people who are promiscuous or highly sexed, they should be reserved for *compulsive* sexuality, which cannot be satisfied. Like compulsive eating, it often springs from insecurity and may be indulged in to ward off anxiety. Unable to find the hoped-for release in sexual intercourse, such people must desperately try, try again. A nymphomaniac is often unable to experience an orgasm, remaining unsatisfied no matter how often she has intercourse; or she may be attempting to satisfy something that cannot be satisfied by coitus. She may be unconsciously homosexual and will not find what she is looking for in any man; or she may be trying to compensate for feelings of inferiority; or she may (unconsciously) feel that intercourse is wicked and she must not enjoy it fully. The male equivalent of the nymphomaniac may be simi-

larly maladjusted; he may be an unconscious homosexual, or have intense conflicts due to feelings of guilt, fear, or inferiority.

Bestiality, or the act of having intercourse with animals. The Kinsey reports indicate that about 17% of all males raised on farms have had some sexual experience with animals. The practice is fairly common among shepherds and others who are isolated from women. However, *preference* for sex relations with animals is due to an emotional maladjustment usually springing from feelings of inferiority. Even the woman who showers her affections on a pet animal is apt to be afraid to bestow it on a fellow human being. She may tell herself people are unworthy of her love, but she is actually afraid they will not appreciate her because she is unworthy.

Sadism and masochism, or deriving pleasure from giving or receiving pain. Sadists may inflict pain on animals or upon people, usually their sexual partners. They wish to dominate, to prove their strength or virility by being aggressive or (for example) by being like their dominating fathers who used to punish them. Sadism need not be expressed in the form of a sexual deviation. Teasing is one of its mild forms, although this may be far from mild, as those of us who have known practical jokers can testify. Children are often sadistic in their drive to assert themselves—although I believe some actions which are called sadistic in children are due to curiosity and lack of understanding; a child who pulls the wings from flies *may* have no idea he is being cruel, since he may be acting from the same impulses that would make him examine an inanimate object.

Masochists derive pleasure and satisfaction from being treated cruelly, from being hurt physically or emotionally, or from hurting themselves. This usually has its roots in the (often unconscious) desire to be punished for some "sin." Masochism has been called neurotic submissiveness and sadism, neurotic aggressiveness; but since they spring from similar maladjustments, they may both exist in the same person. Masochism appears in a nonphysical form, as a character attitude, far more frequently than it does as a sexual deviation.

Sexual criminality. The term *sex maniac* covers people who, like Jack the Ripper, commit violent sex crimes, such as rape and murder. They are suffering from emotional illnesses or defects, however well concealed these may have been before the crime was committed. Many of us have peculiar sex impulses, usually of a transient nature, which we do not actually consider carrying out, any more than we would put into action any number of notions that pop into our minds—from jumping off the

top of a high building to tripping up a pompous fat man. In some sex maniacs, the mechanisms that control normal people are defective, or break down. In others, deep-rooted feelings of guilt, inferiority, or insecurity may cause their sexual instincts to be shunted off in abnormal directions, some of which are socially dangerous.

PSYCHOSES

People suffering from psychoses are called psychotics, or psychotic persons. They are, to a greater or lesser extent, out of touch with reality for some, if not all, of the time.

A psychotic individual may live in his own private world, not seeing or hearing anything that goes on around him. He may not even feel it if he is suddenly slapped—or if he does feel it, it may bring a happy smile to his face. He may go into a *catatonic* state, standing absolutely motionless for hours in a position no normal person could maintain for more than a few minutes; on recovering from this state he may be able to report on things that happened, to which he had appeared completely oblivious. He may suffer from *hallucinations*, that is, see and hear things that have no existence outside of his mind, or *delusions*: which are unreal beliefs. A person, for example, may be strongly convinced that he is the King of England.

This distortion of reality is one of the main differences between neurotic and psychotic people. Something may *seem* real to the neurotic, but it *is* real to the psychotic. This is what I mean: George Gray, whom I told you about on page 255, said he used to feel as though he were living on enemy territory; however, he knew exactly where he was living, using those words to describe his uneasiness and fear of people. A psychotic person saying the same thing would be convinced that he *was* actually surrounded by enemies who wanted to kill him, force him to do certain things, “gain control of his thoughts” and so on. The “evidence” which the psychotic person presents is quite different from that by which someone who is neurotic reaches his conclusions. If, for example, the latter believes he is unattractive to women, he may support his theory by the evidence that a girl refused to accept his invitation, ignoring the fact that he invited her so late she might well have had a previous engagement. A psychotic person, however, “proves” that people are trying to get into his thoughts by pointing to a television aerial on the roof or citing the way someone looked at him in the subway. The entire *quality* of reality is distorted to the psychotic person.

Like neuroses, psychoses have their roots in the individual's early life. Perhaps we can say that the psychotic person's inadequate or inappropri-

ate methods of dealing with his difficulties are *complete* while those of a neurotic person are *partial*. Or we might say that the latter takes unwise courses in struggling with his problems whereas the former is overwhelmed by them. If we compare the neurotic person to an imaginary man who goes through life with a cast on his ankle because he once broke it, we can say that the psychotic person puts his entire body in a cast because he can't endure the pain in his ankle.

The psychotic person lacks insight. His disorders are so intense or inclusive that any compromise with normal social requirements is impossible. In other words, he fails *totally* to adapt.

Because of his distortion of reality and the fact that his entire psyche (rather than just a portion of it) is ill, such a person must be protected from himself and society, and society must be protected from him. Otherwise he may fail to guard himself from the ordinary hazards of life, or deliberately mutilate or kill himself or some other person. It requires the judgment of a trained psychiatrist, often after a period of observation, to determine whether or not a psychotic person is likely to constitute a danger.

TYPES OF PSYCHOSES

The psychoses may be classified in different ways, but they are usually divided into *functional* and *organic* (with brain damage). The functional psychoses are considered under the headings of 1. *schizophrenia*, 2. *paranoia*, and 3. *manic-depressive psychoses*, including *involutional melancholia*.

1. *Schizophrenia*. This disease was formerly called dementia praecox (early loss of mind), because it usually appears between the ages of fifteen and thirty. It is the type of psychosis most frequently seen. Schizophrenia means split mind, and, indeed, the individual suffering from it does not appear to be a "whole person." The type of child most apt to develop this disease is usually shy, dreamy, bored, and lacking in physical and mental "pep." Unable to cope with the world he tends to withdraw from it, and the added difficulties of adolescence may drive him into a world of his own creating. (But *a certain amount of daydreaming is perfectly normal*, especially in adolescence, so don't decide your teen-age daughter is going to be a schizophrenic because she's so immersed in a romantic dream that she doesn't hear you call her to dinner!)

As a rule, schizophrenia manifests itself slowly, although sometimes it makes its appearance abruptly in an acute attack of confusion. The patient becomes more and more withdrawn, his emotions fade or become distorted. The "split" personality of the schizophrenic seems quite apparent when, with a happy smile, he says things like, "I'm going to be shot

by a firing squad within the hour," or cries over something that a normal person would consider good news. He may have difficulty in comprehending even the simplest abstraction such as "a stitch in time saves nine"; it is as though he were incapable of making the slightest mental effort.

Schizophrenia is divided by psychiatrists into four types, the *simple*, the *hebephrenic*, the *catatonic*, and the *paranoid* types. Although certain types of schizophrenia respond more readily to treatment than do others, early diagnosis and treatment are extremely important. Of course, this is highly desirable in all cases of neurotic and psychotic illness, but it is particularly true with schizophrenia, as the chances of recovery appear to be closely related to the duration of the condition.

2. *Paranoia*. This psychosis is also called *monomania*, *delusional insanity*, and *persecutory insanity*. The patient suffering from it may sound and act fairly normal, although he is very ill. That is, his memory may be adequate, his confusion not apparent, and his reasoning logical—although his premises are false and his judgment impaired. It usually occurs between the ages of thirty and fifty, particularly among people who have always been self-centered, jealous, and suspicious. A person suffering from it becomes more and more deluded, seeing hidden meanings to support his conviction that he is being plotted against—by such means as x-ray or hypnotism. This type of psychotic person feels quite justified in "defending himself" by lawsuits, or antisocial acts including murder. Some of these people are commonly referred to as *maniacs*: for example, a man may be spoken of as a *pyromaniac* if he sets fire to a building, as a paranoid person might do in order to "destroy the evil people in it."

A paranoid person is quite different from a neurotic individual who believes "everyone's against me" or "everything happens to me," for the latter merely places undue emphasis on certain things that happen, whereas the former distorts them completely.

3. *Manic-depressive Psychoses*. These are also called *alternating insanity*, because of the alternating period of mania, with exaggerated feeling of elation and well-being, and of melancholia, an equally exaggerated and groundless misery. The term *cyclical insanity* has been used because of the rhythmical nature of these states, which usually are separated by a relatively normal period. During the manic stage, the patient's energy seems boundless; he may dash about talking gaily and wildly for twenty-four hours at a time without rest or sleep. The term *maniac* is specifically applied to a person whose behavior is very wild at this stage of the psychosis. In his depressed state he may sit or lie miserably, scarcely able to move or speak, wishing for death which he sometimes seeks very cleverly.

The "cyclic personality type" of individual is not to be confused with a true manic-depressive. Normal people have their ups and downs, which may be of a fairly rhythmical nature. Their moods may alternate during the course of a day, so that they feel wonderful (or terrible) in the morning, and quite the opposite at night. Some women feel depressed before each monthly period; many people get "blue" in bad, wintry weather while each spring day makes them bubble over with high spirits. These moods are quite different from the periods of wild elation and the ones of profound unhappiness which the person with a manic-depressive psychosis goes through.

Involutional Melancholia. This is a state of depression which may occur in the later periods of life, during the change of life (menopause) in women and its emotional counterpart in men. It is always accompanied by the danger of suicide.

THERAPY (TREATMENT)

Many of these illnesses are not hopeless although their severity may make them appear to be. New methods have been devised and are constantly being discovered to restore mental health to people who used to be regarded as incurably insane.

The various forms of *psychotherapy* I described in the last chapter are used on psychotic patients if and when their condition is such as to make it feasible. You can see for yourself how ineffective it would be to employ methods based on verbal communication when patients are out of contact with reality, completely absorbed in their own fantasies and hallucinations.

Adjunctive therapies are very useful in the treatment of psychotic people. In addition to occupational therapy, they have been helped by *music therapy*, and by *hydrotherapy* (wet packs, immersion in warm water for several hours at a time, etc.). *Psychodrama*, like play therapy, provides a means of communication for patients who are not up to the more articulate forms of expression, as well as a way to "get things out of their systems."

Shock therapy is often employed when a psychotic patient remains out of contact with the real world. This new method has proven very effective, sometimes bringing about spectacular improvements, although frequently it must be followed by psychotherapy to be permanently effective. *Electrical shock* and *insulin coma* are the most frequently employed forms of shock therapy. The patient is rendered unconscious

by a carefully controlled electric shock or a dose of insulin, usually repeated several times a week. Several theories have been advanced to explain how these treatments restore the patient to reality: that the shock breaks through the barrier the patient has erected to keep out the real world; that whatever portion of his mind remains healthy responds to the threat of annihilation represented by the shock and "takes over" in the emergency; that there are physical reasons, such as the fact that the supply of adrenalin is suddenly increased by the shock. However, shock therapy was not developed as a result of theories, but rather because of observations made by doctors who had seen its astonishing effects when it occurred by accident—as, for example, in the case of a psychotic patient who happened to have diabetes, and had an accidental overdosage of insulin resulting in shock or coma (see page 91).

Shock therapy has been successful in patients suffering from depression, particularly involutional melancholia, and in schizophrenia. Extreme care is taken to prevent any injury to the patient from the shock, so that the incidence of accidents is extremely small.

In some cases the patient is given a light shock—*subcoma insulin*, for example, or is put to sleep for a comparatively long period by means of electricity or drugs.

Medicines are also given to calm or to stimulate wild or depressed patients.

Psychosurgery. This differs from brain surgery and neurosurgery (operations on the nerves) which are undertaken to repair or correct physical conditions—such as, to cure an infection, to remove a growth or some diseased tissue, or to repair an injury. Psychosurgery is performed for the purpose of *altering the patient's mental and emotional state*.

It had been observed that soldiers and others who had their brains wounded or injured in a manner that severed the connection between two parts of the brain (without injuring either part) underwent marked personality changes. There was a lessening of emotional reactions and of tensions. This is what the surgeon does when he performs a lobotomy: certain parts of the brain are punctured with a knife. This and similar types of psychosurgery have been performed on some thousands of psychotic patients regarded as hopeless cases. The percentage of success has been high enough to make some people feel it should be undertaken early in many illnesses.

I am not so enthusiastic. I don't mean to minimize the positive benefits of this operation which has enabled some "hopeless" patients to get along in society; and I feel it is justified in cases which have not responded to any other form of treatment and in which the patient's misery is extreme.

(It is most effective in relieving mental suffering which can be as terrible as physical pain.) However, the mortality from this operation is between 2 and 3% which, low as it is, makes me feel it should be undertaken only as a last resort. Then, too, I cannot overlook the negative aspects of the personality changes that accompany it—for example, the emotional shallowness exhibited by many lobotomized patients. And, finally, I have great hopes that *science will soon find cures for many patients suffering from psychoses.*

I cannot predict which of the many current forms of research will be successful. For example, a chemical compound has been discovered (*lysergic acid diethylamide*) which produces, for some hours, the symptoms of schizophrenia. It is possible that an "antidote" could be discovered which may cure many victims of this disease which at present accounts for a large percentage of all institutionalized mental patients. Similarly, experiments with ACTH and cortisone (see page 101) may provide a clue to the cure of this and perhaps other psychoses.

SOME PHYSICAL CAUSES OF PSYCHOSES

The psychoses I have been discussing are the result of *functional* disorders, that is, they have (as far as science can discover) no basis in the physical, organic structure of the mind. However, similar conditions can arise from physical causes. These include:

Infectious diseases involving the brain itself, such as encephalitis and tubercular or syphilitic lesions. Most diseases such as acute meningitis and mastoiditis are controlled by the "wonder drugs" before they can reach and injure the brain. *Paresis*, which causes a form of paranoia, used to be prevalent in the past, before syphilis (which causes it) could be prevented and cured. Paresis itself can be cured today.

Certain diseases involving the nervous system. *Huntington's chorea*, which usually occurs first at 30 to 45 years of age, can cause mental deterioration. It should *not* be confused with the form of *chorea* known as *St. Vitus Dance* from which children may suffer (see page 417).

Deficiencies. For example, *pellagra*, which is due to a vitamin deficiency, can eventually affect the brain. This disease responds quickly to treatment, mainly consisting of Vitamin B₃.

Poisons. Some substances, such as lead, affect the brain. The poisons, called *toxins*, formed by the bacteria causing some diseases, can bring about delirium, which very much resembles a temporary psychosis, in patients who have very high fevers.

Tumors involving the brain or affecting the central nervous system can cause psychoses.

Interference with the brain's blood supply, which may result from a cerebral hemorrhage or hardening of the arteries, can interfere with the brain's normal functioning (see page 616 on arteriosclerosis).

Epilepsy. In a very small percentage of all cases of epilepsy, some mental deterioration will result. (See page 684 for a discussion of this "step-child of all diseases.")

Wounds and Blows. Obviously, the brain can be injured by gunshot wounds, and damaged in various ways by blows.

Senility. There are psychoses which are associated with aging of the brain.

MENTAL DEFECTIVES

The majority of mental illnesses from which people suffer do not stem from a lack of intelligence. However, there are conditions in which the intellect is involved. We use the term mental defective to describe people whose intelligence is below normal. Lowest in the scale are the *idiots*. Their brains are, from birth or shortly thereafter, so defective or so badly damaged that they do not progress beyond the level of intelligence of a child of three. Next come the *imbeciles* with a mentality of, roughly, from three to seven; and then the *feeble-minded* (also called *retarded*, and *morons*) who go all the way up the scale from the mental age of seven to the "low normal."

Idiocy and imbecility exhibit themselves early in the child's development. (I describe the normal development of babies on page 386.) Feeble-mindedness may not become apparent immediately. Sometimes it is not easy to recognize the higher grades of feeble-mindedness. Methods of determining the intelligence (such as the *intelligence test* which establishes the *intelligence quotient*—the I.Q.) are excellent. But they deal with human beings and not with material things that can be weighed and measured exactly. No matter how carefully allowances are made for emotional factors, they cannot always be completely separated from the intellect. There have been cases in which a child's I.Q. has "changed"; it was low due to apathy, which resulted from an emotional state and disappeared with treatment. There have also been children whose general physical condition was below par and caused them to do badly on intelligence tests. Once in a while we even see a child who has survived in spite of practically complete neglect, and whose apparent mental deficiency is due to a lack of any education whatsoever, using the word education in its broadest sense.

Some types of mental deficiency are due to a constitutional defect producing what used to be called "monsters" or "nature's mistakes."

Such abnormalities are fortunately rare, and when they occur in the brain and nerves the deformed infant often does not survive very long. We do not know the reason for some of these defects. A few of them are hereditary.

This certainly does *not* mean you shouldn't have children because you have heard that "there's feeble-mindedness in the family" or "insanity runs in the family." In the first place, "poor Great-Aunt Martha" (or Cousin Horace) may not have been feeble-minded at all, but (for example) suffering from the effects of an infectious disease contracted in infancy. In the second place, if insanity actually did "run" in the family, it may very well have been due to the fact that a mentally ill parent was allowed to remain in the home, creating an atmosphere which encouraged the children to develop unhealthy attitudes.

I do not mean to say that mental defects and illness cannot be inherited, but I can't overemphasize the fact that *only a very small fraction of all mental cases are primarily due to inheritance*. If you have any cause to worry about your family or that of your spouse, talk it over with your doctor. Provided you can give him accurate information, he can probably assure you that you are in no danger of having a defective or mentally ill child. Or consult one of the centers specializing in the study of heredity, which I describe and list on page 306.

Incidentally, marrying a cousin does *not* mean that your children will probably be defective; it simply means that there is an increased chance of their inheriting family characteristics, from blue eyes to the fortunately very rare hereditary mental diseases.

Some defects causing mental deficiency can be corrected before any permanent damage is done if the infant is treated early enough; for example, *cretinism* (see page 83).

Mental deficiency can be caused by certain things that affect the infant while he is still in his mother's womb: for example, if she is subjected to radiation from an atom bomb, or if she has syphilis (but not gonorrhea) or, sometimes, if she has German measles during the early months of her pregnancy. It is *not* caused by her taking a few drinks, smoking cigarettes, having sexual intercourse, or by any of the things we used to hear about—like being frightened by a mouse or thwarted in her desire to eat lobster.

Mental deficiency can result from birth injury—that is, damage to the baby's brain while he is being born, possibly caused by "high" forceps (see page 353). *Cerebral palsy*, caused in this way, used to be considered a form of mental deficiency. Now, however, it has been discovered that the injury is usually not in the portion of the brain and nerves involving the intellect, but rather in those involved in muscle control. Because these children were unable to control their muscles—including

those having to do with speech—they were formerly treated as though they were imbeciles; this, of course, had a disastrous effect on their development.

HOSPITALIZATION

Almost all of the cases I have discussed in this chapter should be treated in hospitals. The mistaken notion that “it would be cruel to send a psychotic patient to an institution when he would not hurt a fly” or “it’s my duty to look after him,” has caused needless tragedies and suffering. A psychotic person *may suddenly become* capable of hurting himself or others; and the entire family, especially its younger members, may suffer severe emotional disturbances as a result of his presence. Perhaps equally important is the fact that the patient has a very much better chance of improving or getting well in a hospital or sanatorium equipped to treat and to care for him than he has in any home.

Don’t try to handle the problem of hospitalization yourself. If the condition comes on suddenly, and the patient becomes violent or homicidal or suicidal, you may have to restrain him, if possible with the help of others, until the doctor or the police arrive. In less acute cases, a doctor, *not* a member of the family, should take over. There are several reasons for this. In the first place, an untrained person is not capable of telling whether or not anyone is psychotic, and a mistake in either direction can be serious. Nor can an untrained person handle anyone who is seriously ill mentally. A psychotic person may kill himself or someone else even though he seems to be quite docile.

If you notice that a dear friend or member of your family is undergoing a marked change in personality (if he loses interest in his friends, recreation, or work, seems to be “off in a dream,” incoherent, depressed, or overly suspicious), talk it over with your doctor or at a hospital clinic. Do not discuss the matter with the person himself unless he asks your advice. Then say it would be wise for him to have a complete *medical* checkup by his regular physician, or one you suggest (see page 527 on how to choose a doctor).

The second reason for you to avoid taking the matter into your own hands concerns your relationship to the patient. If you should trick him into going to some mental institution, it will interfere with the help you could otherwise give him during his stay there and even after his cure. The period following a patient’s release from a mental institution is a difficult one, and he will require your sympathetic understanding. People may be reluctant to accept him as cured, and many employers refuse to employ someone who has been institutionalized. They feel his sick-

ness may recur. It is true that it may—but on the other hand, *any* employee may become physically or mentally ill, or have an automobile accident. Great efforts are being made to educate the public regarding mental illness. Detailed suggestions for helping a discharged patient are given by his doctor or the social service department of the institution, and by government and private organizations, such as your state mental health association (see page 280). Through them you can also get useful books and pamphlets, some free and some at a nominal cost. But by far the greatest help you can give lies in establishing a good relationship. The basis of such a relationship must be *your complete understanding and acceptance of the fact that there is no stigma attached to mental illness.*

Finally, there are laws which make it very difficult for an individual who attempts to handle a psychotic patient on his own. The average person usually has no idea of what is involved in the *legal aspects of commitment*. These vary in different states. Often they seem unnecessarily complicated, even “unfair,” but we must remember that it is hard to work out a simple method covering all the requirements for safeguarding the individual and protecting society. Relatives of the mentally ill naturally want to avoid publicity, and in most states it is possible to keep this to a minimum if the facts are known to the family doctor or the committing physicians.

Patients are usually committed for a period of observation (around a week) after which time they are re-examined. Under certain circumstances, alcoholic persons can be committed in this way. As they are usually released quite soon, it is especially important to have the help of an understanding doctor so that the alcoholic person won't feel some member of his family is trying to punish him, but will be receptive to the idea that he is ill and can be cured.

Some of the organizations listed on page 279 will help you obtain information about commitments. If you can't get in touch with them or with a physician or hospital, information can be obtained through your health department.

It is not easy to see someone dear to you enter a mental institution, even when your doctor says it is necessary. Try to remember that he or she has a good chance of coming out again, cured or improved.

TYPES OF HOSPITALS

Mental hospitals, like other hospitals, vary as to *type* and *quality*. Some provide up-to-date treatment while others limit themselves to caring for the patient's basic requirements (*custodial care*). In some cases, the latter is all that can be done. When selecting a mental institution you

should find out which type it is, in addition to making certain that it meets the requirements I have given on page 559 when I tell you how to select a hospital. A private "custodial" sanatorium may be ever so much "nicer" and less depressing in appearance than a state institution, but in many instances the treatment which the latter offers is most important. Remember, too, that mental illnesses usually require comparatively long periods of hospitalization. I have known families that failed to take this into consideration, making great sacrifices to pay for a few weeks in a private institution when the same amount of money should have been stretched over a longer period.

INCURABLE CASES

Some of the cases I have discussed in this chapter do not respond to treatment; in a few of them, treatment is not even attempted, and the emphasis is placed on making the patient as safe and comfortable as possible. Families of such patients face difficult decisions which I think many of us, including some physicians, are inclined to dismiss rather glibly.

As yet, there is little that medical science can do to repair a defective brain or brain degeneration. There are times, therefore, when we doctors must honestly tell parents that a child cannot be normal, and that the only wise thing to do is to place him in an institution. Unfortunately, however, this is sometimes said in a tone that implies "and forget you ever had him." Quite understandably, many parents react to this by saying "No, never," closing their minds and consequently ruining their lives and those of their other children.

Doctors should always help these parents to explore the situation thoroughly and arrive at the best solution. It is not always easy for a parent to realize that the mentally defective baby will not remain a child. His intelligence will not progress beyond the level of the three- or five- or seven-year-old, but his physical development will continue—with all the problems this entails not only for the family but for the defective child himself. Even the most loving of parents cannot always spare such a child the unhappiness which often adds emotional disturbances to his mental deficiency. In many cases, placing him in an institution is the only way to be fair to him, as well as to his family and to society.

However, some types of defective children *can* be brought up in the home. Occasionally there are circumstances which make it possible to do this—not without sacrifice, of course, but without serious injury to the family. These defective children include a small percentage of idiots (for example, Mongolian idiots, some of whom actually have the intelligence of imbeciles) and an increasingly larger percentage of the higher grades

of mental defectives. Skilled and patient teachers in schools for the mentally retarded are able to teach some of these children enough to enable them to live safely in the world and even to attain a degree of social usefulness. Before any decision is made, the entire situation must be carefully evaluated, including the child's condition, the home situation, the availability of help in education, and so on. The Children's Bureau and the National Association for Retarded Children (see page 279) will provide information about schools, and other needs.

The parents of a *psychotic* child face an even more complicated situation. In the first place it is often difficult, sometimes impossible, to determine whether or not, or to what degree, a psychotic child is also mentally deficient. In the second place, there are as yet very few day "schools" where such children can be helped or, at the least, their parents relieved of the difficulty of caring for them all day long. (In addition to the Children's Bureau, a comparatively new parent-organization group called the League for Emotionally Disturbed Children, Inc., 10 West 65th Street, New York 23, N.Y., may be able to provide help for parents of psychotic children.)

I think it is advisable for all parents who face the problem of placing their children in institutions to have some form of psychiatric help in making their decision. No matter how much information is obtained and how wisely the decision is arrived at, the emotions are bound to be involved. If feelings of uncertainty and guilt are brought into the open before the decision is made, it can be "lived with" far more successfully than if these feelings are repressed.

What I have been saying about defective children naturally applies in many instances to older incurables. It is particularly difficult to "put away" a beloved parent even when one realizes that his or her presence in the home is injuring the children in the family. One mother I know felt so unhappy after visiting her father (who had lucid periods during which he used to beg her to take him home) that she upset her children almost as much as his presence would have upset them. Talking to an understanding psychiatric social worker enabled her to find an outlet for the sorrow she thought she could conceal from her children.

The fear that their dear ones will not be handled with consideration or receive the best treatment in an institution, is particularly hard for families to bear. It is true that some state mental institutions are overcrowded and understaffed, as you may have read in articles exposing the conditions in mental hospitals. Fortunately some of the conditions described by these investigators are being remedied. Fortunately, too, many state institutions do excellent work even when they lack the money that would make them far pleasanter places for the patients—and for the doctors and other personnel.

The type of institution your community provides depends largely on the attitude of your community. If its citizens understand the importance of mental health, if they are sufficiently interested to find out the qualifications of candidates for elected and appointed positions, if they support progressive legislation in this field—including the granting of adequate funds—their institutions will be able to provide the best that medical science can offer.

Your understanding of mental illness will enable you to find the best ways of preventing it in your own family circle, or helping to cure it if it should occur. It will also enable you to do your share, as a citizen, in bringing the benefits of mental health to the entire community.

A DIRECTORY OF MENTAL HEALTH AGENCIES*

LIST OF FEDERAL AGENCIES

NATIONAL INSTITUTE OF MENTAL HEALTH, Public Health Service, U.S. Department of Health, Education and Welfare, Bethesda 14, Maryland.

CHILDREN'S BUREAU, Social Security Administration, U.S. Department of Health, Education and Welfare, Washington 25, D.C.

EXCEPTIONAL CHILDREN AND YOUTH, Office of Education, U.S. Department of Health, Education and Welfare, Washington 25, D.C.

OFFICE OF VOCATIONAL REHABILITATION, U.S. Department of Health, Education and Welfare, Washington 25, D.C.

LIST OF NATIONAL ORGANIZATIONS (PRIVATE)

THE NATIONAL ASSOCIATION FOR MENTAL HEALTH, INC., 1790 Broadway, New York 19, N.Y.

NATIONAL COUNCIL ON FAMILY RELATIONS, 5757 South Drexel Avenue, Chicago 37, Illinois.

AMERICAN ASSOCIATION OF MARRIAGE COUNSELORS, 270 Park Avenue, New York 23, N.Y.

LEAGUE FOR EMOTIONALLY DISTURBED CHILDREN, 10 West 65th Street, New York 23, N.Y.

NATIONAL ASSOCIATION FOR RETARDED CHILDREN, 129 East 52nd Street, New York 22, N.Y.

AMERICAN OCCUPATIONAL THERAPY ASSOCIATION, 33 West 42nd Street, New York 18, N.Y.

AMERICAN PSYCHIATRIC ASSOCIATION, 1785 Massachusetts Avenue, N.W., Washington 6, D.C.

* Address a letter to the "Director" of any of the organizations listed with your request for information or help. The title of the organization will tell you the type of work it engages in.

AMERICAN PSYCHOANALYTIC ASSOCIATION, 36 West 44th Street, New York 36, N.Y.

AMERICAN PSYCHOLOGICAL ASSOCIATION, 1333 Sixteenth Street, N.W., Washington 6, D.C.

AMERICAN ASSOCIATION OF PSYCHIATRIC SOCIAL WORKERS, 1860 Broadway, New York 23, N.Y.

LIST OF STATE MENTAL HEALTH ASSOCIATIONS

ALABAMA ASSOCIATION FOR MENTAL HEALTH, P.O. Box 2591, Birmingham 2, Alabama.

ARIZONA ASSOCIATION FOR MENTAL HEALTH, c/o William B. McGrath, M.D., Professional Building, Phoenix, Arizona.

MENTAL HEALTH SOCIETY OF NORTHERN CALIFORNIA, 2015 Steiner Street, San Francisco 15, California.

SOUTHERN CALIFORNIA SOCIETY FOR MENTAL HYGIENE, 3067 West 7th Street, Los Angeles 5, California.

CONNECTICUT ASSOCIATION FOR MENTAL HEALTH, 956 Chapel Street, New Haven 10, Connecticut.

MENTAL HEALTH ASSOCIATION OF DELAWARE, INC., 1404 Franklin Street, Wilmington 6, Delaware.

FLORIDA ASSOCIATION FOR MENTAL HEALTH, 122 Wall Street, Orlando, Florida.

GEORGIA ASSOCIATION FOR MENTAL HEALTH, 502 Kempner Building, 41 Exchange Place, Atlanta, Georgia.

IDAHO MENTAL HEALTH ASSOCIATION, 615 S. 20th Avenue, Caldwell, Idaho.

ILLINOIS ASSOCIATION FOR MENTAL HEALTH, INC., 123 W. Madison Street, Chicago 2, Illinois.

INDIANA ASSOCIATION FOR MENTAL HEALTH, 615 North Alabama, Indianapolis 4, Indiana.

IOWA ASSOCIATION FOR MENTAL HEALTH, 528 Flynn Bldg., Des Moines, Ia.

KANSAS ASSOCIATION FOR MENTAL HEALTH, 10th & Van Buren, Topeka, Kansas.

KENTUCKY ASSOCIATION FOR MENTAL HEALTH, INC., c/o *The Courier-Journal*, Louisville 2, Kentucky.

LOUISIANA ASSOCIATION FOR MENTAL HEALTH, 816 Hibernia Bank Building, New Orleans 12, Louisiana.

MENTAL HYGIENE SOCIETY OF MARYLAND, 317 E 25th Street, Baltimore 18, Maryland.

MASSACHUSETTS ASSOCIATION FOR MENTAL HEALTH, INC., 41 Mt. Vernon Street, Boston 8, Massachusetts.

MICHIGAN SOCIETY FOR MENTAL HEALTH, Room 645, 153 E. Elizabeth Street, Detroit 1, Michigan.

- CITIZENS MENTAL HEALTH ASSOCIATION OF MINNESOTA, INC., 309 E. Franklin Avenue, Minneapolis 4, Minnesota.
- MISSOURI ASSOCIATION FOR MENTAL HYGIENE, 1210 E. University Street, Springfield, Missouri.
- MONTANA SOCIETY FOR MENTAL HEALTH, 315 Spruce Street, Anaconda, Montana.
- NEW JERSEY ASSOCIATION FOR MENTAL HEALTH, Division of National Association for Mental Health, 240 West Front Street, Plainfield, New Jersey.
- NEW YORK STATE SOCIETY FOR MENTAL HEALTH (State Charities Aid Association), 105 East 22nd Street, New York 10, New York.
- NORTH CAROLINA MENTAL HYGIENE SOCIETY, P.O. Box 2599, Raleigh, North Carolina.
- NORTH DAKOTA MENTAL HEALTH ASSOCIATION, 1006 9th Street, Bismarck, North Dakota.
- OHIO MENTAL HEALTH ASSOCIATION, 83 South High Street, Columbus 15, Ohio.
- OKLAHOMA ASSOCIATION FOR MENTAL HEALTH, P.O. Box 1672, 223½ Park Avenue, Oklahoma City, Oklahoma.
- MENTAL HEALTH ASSOCIATION OF OREGON, 429 Park Building, Portland 5, Oregon.
- PENNSYLVANIA MENTAL HEALTH, INC., 1 North 13th Street, Philadelphia 7, Pennsylvania.
- RHODE ISLAND SOCIETY FOR MENTAL HYGIENE, 100 No. Main Street, Providence, Rhode Island.
- SOUTH CAROLINA MENTAL & SOCIAL HYGIENE SOCIETY, Charleston County Health Department, Charleston, South Carolina.
- SOUTH DAKOTA MENTAL HEALTH ASSOCIATION, 827 South Dakota Avenue, Sioux Falls, South Dakota.
- TENNESSEE MENTAL HYGIENE ASSOCIATION, c/o Dr. Joe Johnson, Interstate Building, Chattanooga, Tennessee.
- TEXAS SOCIETY FOR MENTAL HEALTH, 2410 San Antonio Street, Austin 5, Texas.
- UTAH ASSOCIATION FOR MENTAL HEALTH, 112 South State Street, Salt Lake City 1, Utah.
- VERMONT ASSOCIATION FOR MENTAL HEALTH, INC., c/o Mr. James Young, Department of Social Welfare, Montpelier, Vermont.
- VIRGINIA ASSOCIATION FOR MENTAL HEALTH, INC., 1105 West Franklin Street, Richmond 20, Virginia.
- WASHINGTON ASSOCIATION FOR MENTAL HEALTH, 408 Seaboard Building, Seattle 1, Washington.
- WISCONSIN ASSOCIATION FOR MENTAL HEALTH, 119 E. Washington Avenue, Madison, Wisconsin.

PART THREE

**YOU AND YOUR
HOME**

Emotional Attitudes Toward Marriage

WHAT DO most people seek when they marry? The answer, which is *happiness*, may seem obvious, yet there was a time when a consideration of happiness had no part in marriage plans.

In the past, most marriages were based on custom and tradition. Every step, from finding a mate to the wedding ceremony, was controlled by the families of the young couple. Even today, this is the accepted procedure in many parts of the world.

Havelock Ellis, the eminent authority on love and marriage, put it this way, "One may doubt if the happiness today demanded in marriage—whether or not often found—had any existence in ancient days. . . . If marriage often appears less happy today it is because we are less willing to submit to unhappiness or to the make-believe of convention."

Nowadays, in America, people usually marry because they have fallen in love. The choice of a spouse is up to the individual.

While young people no longer depend completely (if at all!) upon parental advice, many of them want guidance. There is an increasing demand all over the country for scientific knowledge of sex and the psychology of successful marriage. This is a good sign, and it should be encouraged and satisfied by schools, churches, social agencies, and (particularly) parents.

While there is no such thing as a blueprint for a happy marriage, it is wise, before taking the step, to be aware of the conditions that best lead to such happiness. Scientific studies have been made, examining thousands of marriages to discover the reasons for their success or failure.

Experts in the field of marriage list the following factors as most important in choosing a mate. Because falling in love is an emotional process, it is ridiculous to expect anyone to go around with this list in hand and check off each item! However, it is a good and sobering idea to consider these factors before actually marrying.

Emotional adjustment. It is obvious that people who are normal in the sense that I use the term in Chapter 11 have the best chance for happiness in life, which naturally includes happiness in marriage. Be sure to read Chapter 11 for an over-all picture of the normal person.

Within the broad framework of that description, which types make the best husband or wife? The list below gives certain characteristics which should be sought for, or avoided, when considering marriage. Authorities suggest that at least two of the good characteristics should be present.

<i>Good</i>	<i>Bad</i>
Optimistic personality	Pessimistic personality
Cooperativeness	Dominating personality
Consideration and sympathy	Inconsiderate and unsympathetic
Some degree of emotional dependence	Too self-sufficient emotionally; too much "narcissism" or self-love
	Dependent personality; too strong an attachment to parents

Cultural background. The best chances of success lie in finding a mate of the same race, philosophical outlook or religion, and economic and social class. Most people feel more at home with others who have had a similar childhood and have similar customs, manners, and tastes. While marriages between people of different groups can be successful, they usually face additional problems due to social disapproval or to the number of adjustments which must be made, and which often create tensions and irritations. For example, a rural Southern boy and a city-bred Northern girl may find it extremely difficult to find a way of living that suits them both.

Educational level. School provides experiences in learning and in being with others; these are extremely helpful in making marital adjustments. It is desirable for both partners to have, roughly, the same amount of formal education—or the informal equivalent.

Economic and job status. More important than the size of a man's income is the fact that he has a steady job which does not require him to move about, leaving his wife and family for prolonged intervals of time. The more educational preparation he has put into his job, the better candidate he is for marriage. Most important is the fact that he has put aside savings before marrying.

Number of friends. Generally speaking, men and women who have had many friends of each sex before marriage are apt to be types that will make satisfactory mates.

Membership in organizations. It is considered a good sign if an individual is a member of a social, labor, or any other kind of club or organization. It indicates the fact that he is accepted by, and accepts, a large group of people.

COURTSHIP

No matter how much your pulse beats at the sight of your beloved, don't rush into marriage. Give yourself and your future mate a chance to know each other. It will save a lot of trouble later on. Don't marry anyone with the idea in the back of your mind of reforming him or her. Remember, you are marrying an adult whose tastes and habits are pretty well fixed. If Mary takes John for what he is, and not for what he may become, it will save her a lot of disillusionment. So use the valuable time before marriage to discuss and settle all important matters. Questions such as, shall the wife work? for how long? can you live on the husband's earnings? who will manage the family income? how many children? how should they best be brought up? should all be faced before marriage.

The following questionnaire will serve as a helpful guide:

Answer *yes* or *no*.

- *1. Do you like to spend most of your leisure time together?
- *2. Do you agree on whether or not to have children? Agree on their upbringing?
3. Do you both enjoy the same friends?
4. Do you have similar tastes in books, movies, art, and the kind of home you want?
5. (For the prospective husband) do you like to putter around the house, build and fix things, do gardening? (For the prospective wife) do you like to cook, sew?
- *6. Do you both have the same basic philosophy of life? Same religion or agree on attitudes toward religion?
- *7. Do you like—or share his attitude toward—his parents? Her parents? Is there agreement on ways to deal with them?
- *8. Will you love each other when you are old?

Some comments are necessary on the above questionnaire. Answering "yes" to all the questions would indicate a situation which we are not

likely to find often. A carbon copy of yourself is neither expected nor desired. Disagreement on minor matters makes for stimulating conversation. Danger exists only if there are basic antagonisms. Certain questions are more important than others. There should be a positive "yes" on the questions which are starred. In regard to question 6, it is found that religious disagreements play a small part in disturbing a marriage. These differences tend to be worked out satisfactorily during the courtship. After marriage, the problem is usually centered on the religious upbringing of the child. Question 7 involves the in-laws, who have been the cause of many marital upsets. The courtship period is the ideal time to get to know them and make every attempt to like and be liked.

The courtship period usually goes through several stages:

Dating. This is the time when you play the field, meeting the opposite sex at dances, school, clubs, the Y's, and church gatherings. Dating, however, should be constructive. The normal person dates the opposite sex with the ultimate goal of marriage in mind. When something "clicks" between two people, then all other dating falls off.

Keeping company. While no serious commitments are made, dates are concentrated on one person.

Going steady. The attachment has become stronger.

Private understanding. An avowal of love has been exchanged. Each has, if possible, been introduced to the other's family.

Engagement. This is the final test before marriage. It is the time for practical talk, freely and honestly exchanged, for a decision on compatibility, for examination of personality defects. For the average couple, one year has been suggested as the minimum time for engagement. Of course, this is not an ironclad rule, since some people need more time than others to get acquainted or have had more time to get acquainted before becoming engaged. But a whirlwind courtship should be avoided. Most of them lead to divorce.

LOVE VERSUS INFATUATION

Many people ask "Shall I marry for love?" or, "I am very fond of someone who would, I feel, make a good husband (or wife). But I am not in love. Shall I marry anyway?"

On the other hand, a strong sexual desire for another is often mistaken for love. Psychologists and marriage counselors call this "infatuation" if it is not accompanied by other feelings such as sympathy and tenderness. In adolescents this is called "puppy love" and is usually outgrown in time.

An adequate definition of love has troubled poets and philosophers

from time immemorial. However, for the practical purposes of successful marriage ask yourself these questions:

1. Do you feel a sense of oneness, each with the other? That is, do you consider the other person a part of yourself?
2. Do you feel you can trust the other person? Does he or she give you a sense of security?
3. Are you concerned about his or her welfare and well-being? Do you try in all ways to make the other person happy?
4. Have you found that being apart from the person for a period of time, you still feel the same emotional attachment?
5. Do you find that, the longer you know each other, the desire to stay together grows stronger and that you do not grow bored as time goes by?

If you have answered "yes" to these questions, you may safely say you are in love. If you look over these questions again, you will also notice that they describe true companionship. A physical attraction is not enough to guarantee a happy marriage. Sex is of basic importance in the relationship, but as one authority puts it, it is the sturdy *foundation* upon which the house must be built.

MARRIAGE

What is the best age to marry? Generally speaking, it would be the age when one has reached physical and mental maturity. Naturally, this will vary with each person, but experts put it between the ages of 22 and 30. This has been found to be the average age in most successful marriages, with the husband from four to seven years older than the wife. Here again, exceptions are found. In many a happy marriage the wife is from one to five years older. The point is that the couple should be emotionally stable and mentally mature enough to withstand the stresses and strains of marriage. Since there is a somewhat subtle change in the quality of the relationship since the days of courtship, the adjustments that may be required after marriage involve a deeper and more intelligent attitude.

Many people must postpone marriage for economic reasons. However, we can assume that, in most instances, a bachelor of over 35 has remained single from choice. This indicates character traits which are not compatible with those of a good husband and father. (In many instances these can be changed, though not without trained assistance.) The "bachelor girl" or spinster may also be a bad marital risk, although we must realize that women often adopt this pose because they are unable to find husbands. I should like to caution people against marrying

a "confirmed bachelor" of either sex! I can easily understand why people who marry for the first time when they are over thirty-five are apt not to find happiness.

I should also like to urge people to take into consideration the marital history of a prospective partner. Don't dismiss the fact that he or she has been divorced with "It wasn't his—or her—fault," but be certain you have a good reason for believing that history will not repeat itself. Men and women who have been married and divorced several times are not good marital risks.

Determination to make the marriage a success is one of the most important weapons against divorce. As one authority says, "tolerance, understanding and good humor are more valuable assets in marriage than a starry-eyed idealization of the other partner."

Neither party should expect the other to give in on all points, to make all the sacrifices. It should be a mutual undertaking. Sacrifices will have to be made at one time or another, but they should be made without resentment, with the larger view in mind: the happiness of both.

One doctor wisely said of the happy marriage, "Surely this is success in life. It would be better to fail in all else and succeed at home than to succeed in all else and fail at home."

Love between a man and a woman can be the most beautiful and thrilling human experience.

If we were to define married love in its simplest terms, we would say it has three parts: (1) a sexual attraction, (2) a deep feeling of companionship, and (3) a desire for parenthood. The first two are essential, the third very valuable for emotional fulfillment and complete enduring happiness.

Most of us have experienced the joys (and, of course, the difficulties) of companionship. We have been close to our parents, our brothers and sisters, our friends. We have probably even felt some parental emotions for the baby in our own or another family. These experiences are vitally important in preparing us to make good homes of our own.

We have also had the opportunity to discover some of the things that go into making a good marriage. "I won't nag at my husband when I get married." "I think a man is entitled to good cooking and a nice house if he works hard all day." "I won't expect my wife to bring up the kids all by herself." "Husbands should want to be with their wives and not keep going out with the other fellows." Remarks such as these, which children frequently make in discussing marriage, show that they have been able to see for themselves some of the things that are necessary for a good married life.

But the regular day-to-day life and the intimacy of a relationship between two people of the opposite sex has been a closed book. This is

the new factor in marriage—the one for which people have unfortunately been least prepared by their other relationships and observations. As though that weren't enough, difficulties have been added in the form of ignorance and misconceptions, all of which flourish under the taboos of society.

How unfortunate it is that the act of sexual intercourse with its natural beautiful consequence, the birth of a baby, should be clouded by fear and darkened by shame! The poet, Goethe, said, "Whatever you cannot understand, you cannot possess." Possession, each of the other, is the essence of both sexual intercourse and marriage. Education, training, and experience are necessary if the sexual relationship is truly to be the perfect physical expression of love.

IS SEX EDUCATION NECESSARY?

Some of you may consider me out-of-date for feeling that sex education is necessary in this enlightened day and age. According to most parents, today's young people know as much as—if not more than—they should about sex. And I'm sure that many young people will smile in a superior manner at the very idea of being educated in such matters by any old fogey who writes books!

However, from the questions that are still asked us, we doctors know that a great deal of ignorance and misinformation remains, at least in certain areas of this subject. Both young and older couples frequently ask us whether their sexual relations are "all right." They would like to have the boundaries of normal sex relationships defined, and they are concerned with problems of frigidity and impotence.

Of course a great deal of progress has been made. Wives of the Victorian era almost never consulted physicians because they were unhappy in their sexual relations. Most doctors of that day would have been deeply shocked if a woman asked him whether there was anything to be done because she failed to achieve an orgasm during sexual intercourse. Today, few physicians are so old-fashioned as not to want their patients to enjoy a full and happy marital relationship.

However, there are some people who feel that too much emphasis on sex education is a mistake. Take the case of a young married woman who said to my wife, "I'm sorry Bill and I ever read that book about sex in marriage! It just made him feel guilty because he can't live up to what it says a man should do to satisfy his wife; and I feel guilty because I'm upsetting him! I'd rather be ignorant than become self-conscious trying to follow a lot of blueprints!"

It is true that some books dealing with sex education have been

written in a manner which tends to destroy the spontaneity of this delicate relationship. Because matters concerning sex techniques and skill were taboo for so long, some writers tend to go too far in the other direction, exaggerating their importance and minimizing the importance of the physical attraction existing between two people who love one another.

Yet attraction and intuition are not enough to enable people to solve the problems which may give rise to, or result from, an unsatisfactory sexual relationship.

Many a man sees nothing wrong in using his wife for his own erotic gratification, without considering her needs, perhaps because he is not aware of their existence. Many wives have been brought up to think of sex in marriage as something they owe their husbands, a duty which they tolerate. Because their emotional life should have an outlet, they become frustrated and perhaps turn to their children whom they throttle with neurotic attention. Is it any wonder that the husband of such a wife strays into the arms of a responsive mistress?

These are extreme, though unfortunately not rare, situations. Many marital problems are due to less obvious sexual causes; these, too, can only be solved by a better understanding of sex.

THE PURPOSES OF SEX

You notice I use the plural rather than the singular. Biologically speaking, reproduction is the purpose of sexual intercourse—the means by which life is created. There has been some tendency in recent years to pass over this aspect of the sexual act, perhaps because of the fact that it was, at one time, regarded as the only purpose of sexual intercourse. While a great deal has been written about men and women who want to have children because they think they should, or to prove they can, or for any one of a number of neurotic reasons, most people who feel that life is worth living want to pass on the precious gift of life, to create a new life with the beloved partner.

But sexual intercourse is also an expression of love in the most intimate manner. Giving and receiving the greatest pleasure (and experiencing the release which accompanies it) is a natural and healthy desire. A man and a woman are bound to one another most securely when they share this deepest of all attachments.

SATISFACTORY SEXUAL RELATIONS

Since sexual intercourse can lead to great happiness or great misery, it is important that it be understood by both husband and wife. In discuss-

ing this subject, I shall not attempt to deal with the moral aspects of some questions that arise, for in my opinion this would be going outside the province of the physician.

Should a couple have sexual intercourse before marriage in order to find out whether they are compatible? Whether or not to have premarital sex relations is a matter for each couple to decide. However it seems naïve to me to believe that one can successfully "test" so subtle and delicate a matter. A satisfactory sexual adjustment is seldom achieved immediately, far more often developed gradually.

Does the size of the respective organs of man and woman play an important part in the success of their relationship? Again, no—at least, far less often than is generally imagined. A great many men have worried unduly because they feared they were too small, as have women because they thought they were too large to give pleasure or so small as to make intercourse painful. Except in very rare cases, the relative size of the sex organs is not a major problem, because of the possibility of employing techniques that will minimize any difficulties.

Does having practiced masturbation affect the ability to have successful sexual relations? The harmful effects of this practice are due to the fears and guilts associated with it. Physically, no damage is done by it. Almost everyone has practiced some form of masturbation; 92 per cent of all men interviewed by Dr. Kinsey recalled having practiced masturbation at some time; 88 per cent of all (unmarried) men practiced it between the ages of 16 and 20, and some 50 per cent at the age of 50. The practice among females is scarcely less general, although it is often incomplete or only partially conscious.

Does youthful "petting" interfere with satisfactory sex relations later on? Most normal young people engage in some sort of love-making that does not terminate in intercourse. It is the usual way for them to discover, or demonstrate, their physical attraction for each other. Prolonged or habitual petting, which requires the exercise of great self-restraint, may have a temporary bad effect. For example, a girl who is accustomed to being on guard against letting herself "go too far," may find it difficult, when she is first married, to relax and enjoy the sexual act.

Is sexual experience with others in the past helpful (or harmful) to the establishment of successful sex relations with one's spouse? It is certainly not necessary. Experience in the art of love-making should, ideally, be obtained with one's chosen mate. It is often distressing, especially to a man, if his loved one has been intimate with someone else. However, since our civilization often makes it impossible for people to marry and establish a home until long after they have reached maturity, premarital sex experiences do occur. I think it is important to realize that loving

someone as he or she *is*, requires an understanding of the fact that even past relationships have contributed to creating the person one loves. On the other hand, promiscuity—and also the coldness that comes from repressing sexual desire—are indications of a neurotic attitude toward sex. They may be only a phase of the difficult emotional period of adolescence, but they may be so permanent and deep-seated as to require the help of a trained person, as I explain on page 251.

Does having a homosexual experience mean a person cannot have normal sex relations? According to the Kinsey Report, a great many men and an appreciable number of women, have had some sort of homosexual experience which did not interfere with normal sexual relations later on. However, I feel that everyone who is concerned about such an experience should discuss it frankly with a doctor or a competent counselor, since homosexuality is a complicated problem (see pages 264 and 448).

Is the wedding night a crucial one in the establishment of satisfactory sexual relations? It can be. The bride is usually tense and overwrought, especially if the wedding was a large one. She requires the utmost consideration from the groom, who is usually nervous himself. There have been cases in which the shock of wedding night experiences have created a lasting injury as far as a girl's attitude toward sex is concerned. However, I am inclined to believe that this danger is less great than it was in the past, when many brides had no idea of the nature of sexual intercourse. A groom often finds it difficult to avoid causing his bride some physical pain, but his tenderness for her at this time is apt to be sufficient to compensate for it.

Some of the difficulties of the wedding night can be avoided if the bride has had a preliminary medical examination. In some but by no means all virgins, the hymen, the membrane at the opening of the vagina, (see page 295) does not rupture easily. This makes intercourse extremely painful, or even impossible. In such cases it can be removed by a physician, a procedure so minor as hardly to be called an operation. The hymen can also be stretched, according to the doctor's directions, prior to the marriage.

Before the wedding night the marriage partners should discuss birth control with each other (see page 310 on contraception). Also, your doctor or marriage counselor will answer questions about contraceptive methods.

If the husband is considerate and gentle, will the bride enjoy sexual intercourse? Some young women derive no more pleasure from it than they would from any intimate caress. This may be due to the fact that sexual desire sometimes develops slowly in women. They may not reach sexual maturity until they have been married for quite a while. This awakening may be gradual or it may take place suddenly.

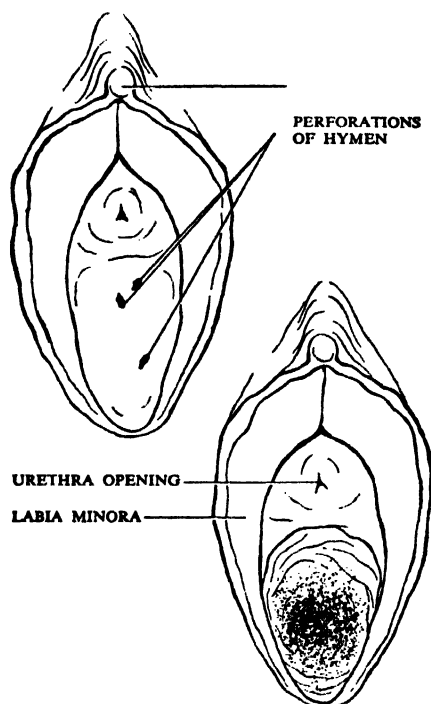


Illustration 14-1. THE HYMEN.

LEFT: A characteristic hymen, with small perforations. **RIGHT:** Complete absence of hymen.

Generally speaking, women are less quickly and spontaneously aroused than are men. Both partners should realize this fact. A woman should not feel that her husband is "crude" or "oversexed" if he desires intercourse with her because he has seen her partially undressed, or because she has given him an affectionate kiss. A man should not consider himself rejected, or decide that his wife is cold if she fails to be aroused so readily.

Many women need a "warming-up" period before they feel a desire to have intercourse—in many cases, before they are physically ready for it. When a woman is sufficiently aroused, her vagina is well lubricated and naturally receptive to the insertion of the penis. Many women respond best to love-making that begins with verbal expressions of affection, kisses, and gentle caresses, and proceeds to stimulation of the breasts, the nipples, the clitoris (the small projection outside the vagina, which is composed of erectile tissue similar to that of the penis), and

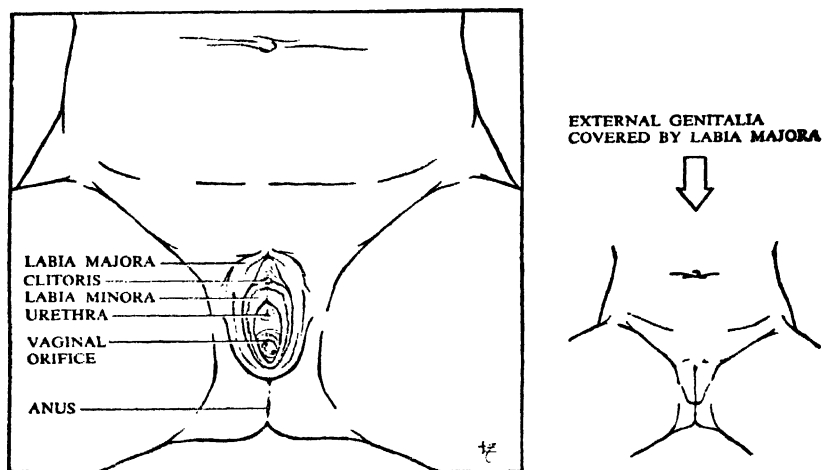


Illustration 14-2. EXTERIOR FEMALE GENITALS.

the vagina itself. Each husband should learn to know the degree to which his wife is excited by caresses of different parts of the body.

Will a wife always achieve sexual satisfaction if her husband is sufficiently skillful? Some women do not, even under the most favorable circumstances, experience an orgasm (the climax of the sexual act). Some experience an orgasm only after they have been married for some time. Some women experience this climax only occasionally, perhaps only at certain periods of the month, as their desire may be of a cyclical nature, reaching its peak before, during, or after the menstrual period. Although in men the orgasm is clearly defined, it may be vague or "diffuse" in a woman. Its degree of intensity varies. It may be centered in the clitoris, it may appear to involve the internal portion of the vagina, or a woman may experience both types of orgasm. While some psychiatrists believe that a "clitoral orgasm" indicates immaturity, there seems to be little scientific evidence for making a distinction between it and a "vaginal orgasm" in most women.

Often, failure to achieve an orgasm does not prevent a woman from having great pleasure in the sexual act; *it does not necessarily cause her to become tense and to feel frustrated*—this, too, varies in individual women. While it is extremely important for a man to help his wife experience the complete sexual satisfaction he enjoys, I know of instances in which couples have become disturbed and tense because of this failure—which often has the effect of postponing satisfaction or creating psychological barriers to it.

Men often reach the climax of their sexual excitement more rapidly

than women do. This discrepancy in "timing" can usually be compensated for by making certain that the woman is highly stimulated *before* intercourse actually begins. While many couples find it particularly satisfying to reach this moment simultaneously, others see no objection to having the woman have her climax first. As a general rule, a woman's desire fades rather slowly after she has had an orgasm, whereas that of a man is apt to vanish immediately. It is not unusual, especially if a man is young or greatly excited, for him occasionally to have an orgasm immediately upon beginning the sexual act (this is called *premature ejaculation*). However, if it occurs habitually, he should consult a doctor. Often it is due to the (probably unconscious) conviction that intercourse is wicked and one should complete the act as quickly as possible. Failure to have an orgasm during coitus is rare in men (except when they are under the influence of alcohol) and should be discussed with a doctor or other trained advisor.

What causes frigidity in women? As I have indicated, failure to have an orgasm does not necessarily mean a woman is frigid. Doctors speak of true frigidity in women as the inability to derive pleasure from sexual relations. This may be caused by insufficient lubrication or lack of adequate stimulation. More likely, frigidity is the result of psychological factors. Failure to enjoy intercourse, or distaste, dislike, and actual abhorrence of it, can be due to conscious or unconscious feelings of guilt, inferiority, or fears—such as the fear of pregnancy, of growing up, of surrendering to a man. In such cases help is usually required to discover and remove the underlying cause.

What is impotence in men, and what causes it? By impotence doctors mean the inability of a man to have an erection. (It does not mean *sterility* which is the inability to have children: see page 318.) Impotence can be, but rarely is, due to physical causes. Even when an adult male is castrated (has his testicles removed) he is usually not impotent. Impotence, in most cases, is due to such psychological difficulties as hostility to women, guilt, and fears—for example, the fear of catching a venereal disease or of being sexually inferior. Some men are able to have intercourse only with women whom they do not respect and are impotent with a woman they admire or love. This is usually due to their often subconscious division of women into two groups: madonnas (good mothers) with whom sexual intercourse is forbidden, and harlots, with whom it is permissible. This stems from the idea that sex is wicked, or from an overveneration of the mother. In most cases, psychiatric help is required to solve the problems causing impotence.

How often should one have intercourse? This is a question I can answer in only the most general terms. Statistics that have been compiled by Dr. Kinsey and others indicate that the average is about twice a

week, more often in young or newly wedded couples, less often in older ones. But so many factors—such as opportunity, physical fatigue, compatibility, and temperament—enter into these figures that they mean little to any individual. The best “yardstick” I can suggest is: if both partners feel well, if coitus does not cause discomfort or fatigue, and is followed by physical and emotional relaxation, there is no need to worry about overdoing things. Repeated failure to be satisfied after experiencing an orgasm is an indication of some problem which should be discussed with a physician or trained counselor.

The desire to have intercourse usually declines in people as they reach middle age. Yet some women reach the height of sexual vigor quite late in life, even after they have passed the menopause; and some men retain virility into their old age.

Whether or not to have intercourse while the woman is menstruating is a matter for each couple to decide. It may cause the wife some discomfort, especially if she has “cramps” during her period, but it will do no physical damage to either the man or the woman. I discuss the question of intercourse during pregnancy on page 336.

Having intercourse does not “use up” one’s potency, and abstaining from it does not increase virility. However, having sexual relations several times a day regularly may decrease the amount of sperm a man produces, thus lessening the chances of having a child. Too much sexual activity does not cause insanity. Too little does not cause it, either, although distressing emotional tension may result from frustration. Lack of interest in sex, or excessive interest in it—both of which I mention on page 302—are indications of difficulties that require expert help. Occasionally these difficulties are of a physical nature, but the overwhelming majority of them spring from psychological problems.

In this connection, I want to warn you: *never* take any medicine, pill, or injection in order to increase or decrease sexual desire, unless a competent physician has discovered a physical condition that requires them. “Potency pills” that contain hormones can be extremely dangerous (see page 86). *Aphrodisiacs* such as *cantharides* (“Spanish fly”) are actually poisonous irritants. Alcohol does not increase desire although it may appear to do so because it releases inhibitions. Occasionally, a tense or shy person finds it easier to relax after having a glass or two of wine or some other alcoholic beverage. But anyone who remains *dependent* on an artificial aid will probably find some form of psychotherapy (see page 251) a far wiser way of getting rid of repressions.

Too much alcohol eventually decreases sexual potency as it does health in general, so drinking too much is obviously an unwise way of attempting to decrease sexual desire. Do not use drugs, injections or remedies of any kind, and don’t give them to your children—not even

saltpeter (nitre) which used to be dealt out lavishly in boy's schools and other institutions.

A well-balanced diet, enough rest, and general care of the body, which I discuss in Chapters 1 and 2, are essential to your health, of which your sexual health is an important part. It is obviously dangerous to attempt to decrease sexual desire by exhausting yourself or eating so little as to feel generally below par! Incidentally, there are no special foods that can increase or decrease potency. When abstinence is necessary, keeping busy and avoiding erotic stimulation as much as possible may relieve sexual tensions.

Is intercourse ever harmful or dangerous? It is, of course, extremely dangerous when either partner is suffering from a venereal disease (see pages 650 and 715). Intercourse, and all other forms of close contact, should be avoided in cases of contagious illness. Certain noncontagious diseases make intercourse inadvisable or even dangerous. This depends on their severity and the general health of the individual. It is impossible to give a yes or no answer except on the basis of a medical examination. Anyone who is not in good health should discuss this matter frankly with his or her physician who will be able to decide whether or not coitus is permissible.

However, I want to make the point that it is often possible to relieve strain or prevent overexertion on the part of either the man or the woman, or both, by assuming certain positions during intercourse. I know of more than one couple that has refrained from having sexual relations because—for example—a fragile wife could not endure the weight of her robust husband, or a man found the exercise too much for his weakened heart. They thought it was not “nice” or “normal” to assume another position which would alleviate their difficulties.

The majority of people in our culture assume a certain position during coitus; but this, again, is only a matter of custom. There is no reason to believe that any position is the “right” one if another method is desirable because of health, relative size, or individual preference.

POSITIONS DURING INTERCOURSE

There are two main possible positions in coitus. The first is the face to face posture; the second is that in which the man faces forward but the woman turns her back. Everything else is a variation of these basic positions. The purposes of the different positions are to increase sexual pleasure and to prevent hygienic dangers or injuries.

Also, a person who has a disabling illness such as certain forms of heart disease may want to use the positions that require the least amount of physical exertion, e.g., the side positions.

Man above woman. In our western culture this combination is considered the normal or standard position. The woman lies on her back and spreads her thighs until there is room between her legs for the man's thighs. By bending her legs, she allows for deeper penetration. The man lies upon his partner's abdomen, supporting his knees and elbows as far as possible on the bed so that he will not be too heavy a burden. If the woman holds her thighs together after entry, it will be helpful in cases where the penis is too small or the vagina too large. It will also increase friction against the clitoris. By holding the thighs tightly together, the woman can prevent the penis from entering too deeply, if this is needed to prevent pain.

If the vagina is large or has been stretched, the following technique may be very helpful: The woman lifts her thighs high enough to encircle the man's neck with her legs or to rest her feet on his shoulders. Thus her body is almost at right angles, with her shoulders flat and her torso lifted as vertically as possible.

Woman over man. The woman can assume a kneeling position over the man and let herself down gradually until the penis is inserted. The advantage of this position is that the woman has full control of the movements, quickening or slowing down as she pleases. It also enables her to adjust herself to the penis by bending forward so that full contact with the clitoris is made. Properly carried out this position can lead to heights of sexual delight. It is advantageous if the man is tired. Its disadvantages are: it requires a good deal of exertion on the part of the female while the male is passive; it is not recommended if her vaginal passage is unusually short; and it is also not recommended for the sick or convalescent male because it is apt to be more stimulating than the position described in the next paragraph.

Lying on side, face to face. The man and woman lie on their sides, facing each other. The woman raises her upper thigh, resting it on the man's upper thigh. This is excellent for those who wish to perform coitus during pregnancy, as there is little pressure on the woman's abdomen. For couples who wish to relax, this side attitude will be appealing and restful.

Rear-entry. Also recommended especially for pregnant women or in any other case where deep penetration and weight on the abdomen is not safe. The woman is placed with her back to the man, usually in a kneeling stance. The man enters the vagina from behind. This position does not give the woman as much pleasure as some other ones, as the

clitoris is not touched by the penis during the union. The man can correct this by fondling the clitoris (and also the breasts) with his hands.

WHAT ARE ABNORMAL SEX PRACTICES BETWEEN A MAN AND A WOMAN?

Broadly speaking, a couple is sexually normal if each derives the highest sexual pleasure and satisfaction from the insertion of the male genital organ into that of the female. This does not preclude experimenting in obtaining satisfaction by other means. For example, there is certainly nothing abnormal in the case of a man who has reached his climax rapidly and, if his wife has not reached hers, makes it possible for her to do so by manual manipulation. There is nothing abnormal about any caress, in the foreplay preceding coitus, that both partners find pleasurable.

In adults the oral zone (the mouth, lips, and tongue) is, to a greater or lesser extent, a sexual one. Some couples find the genital kiss important for the fullest realization of sexual satisfaction. Without attempting to draw an exact line defining the normal limits of this practice, psychiatrists tend to agree that maladjustment is indicated only when actions involving the mouth, rather than the genitals, are the main, or only source of sexual pleasure and climax.

I describe true sexual perversions (deviations) on page 263. In discussing them, I make the point that mature people usually carry with them some holdovers from childhood. These can cause problems in marriage if they happen seriously to conflict with those of a partner—if, for example, the man derives great pleasure from seeing his wife's body, and the woman feels distaste for exposing it. Such difficulties can usually be resolved *provided* both partners approach matters concerning sex in an open-minded, intelligent way, and not with shocked or self-righteous indignation, or guilty shame.

However, in some cases it may be impossible to reconcile the immaturity or maladjustment without trained assistance. Here are some examples. The terms I use are defined on pages 263-266. Of course, I am not referring to people who have a *trace* of the following characteristics, but to *extreme* cases.

Narcissism. These women (or, a little less often, men) can love only themselves. If their partners love them—well, they have that much in common, namely, devotion to the same person! But the partner usually wants (and quite rightly) more than that. A successful marriage, including successful sex relations, is usually impossible as long as the partner remains extremely narcissistic.

Sadism and masochism. We've all seen marriages in which the husband or wife seems to enjoy being dominated, even badly treated, by his or her partner, while the partner enjoys treating his or her spouse badly. However, things seldom work out so neatly, and even if they do, they don't spell "happiness."

Excessive sexuality. (Nymphomania and satyrisms.) I am not referring to instances in which one partner is more highly sexed than the other, since the consideration springing from love will find ways to bridge ordinarily differences. But *compulsive* sexuality, which cannot be satisfied, has deep roots which cannot be reached by love. Fortunately this condition is very rare.

Promiscuity. The truly promiscuous person has intercourse as readily with one individual as with another, attaching no wish for intimacy, in the real meaning of the word, to the sexual act. It is by no means the same thing as *infidelity*, although the two may overlap. The former is more serious, the latter more common and causes a great deal of unhappy marriages. I say "causes" although both infidelity and promiscuity are actually *signs* that there is something wrong, usually in the individuals but perhaps in the marriage. I wish every husband and wife who is faced with the problem of infidelity would *not* blame the "other man" or the "other woman," but would honestly face the question. "What is wrong with yourself, your husband (or your wife), or your marriage?"

Repression. We call people sexually repressed when they have pushed their normal sex instinct so far under the surface of their consciousness that they feel indifference, distaste, or even abhorrence for sex. Of course there are degrees of repression and, in mild cases, it may melt away in the warmth of love. But in extreme cases, happiness in marriage is impossible.

The unresolved "Oedipus complex." A man who is seeking only his mother when he chooses a wife, or a woman who only wants her husband to take the place of her father, will not find what they were looking for. Sometimes a degree of marital happiness is possible for the "little girl" wife who needs to be fathered or the "overgrown boy" husband who needs mothering. But marriage will not bring true happiness, because such people cannot be good husbands or wives, and certainly not good parents.

HOW TO GET HELP IN SOLVING MARITAL PROBLEMS

As I have indicated earlier in this chapter, some sex problems are due to ignorance or misinformation. These often clear up readily in the light of truth. Others, such as those I have mentioned in the above section, and at other places in this chapter, are more complicated. If you need any information I have not given (and of course it would be impossible to answer in a single book every question that might be asked) or if you are worried about yourself, your spouse, or your marriage, be sure to talk things over with a trained person. I suggest you talk to your doctor first, if that is possible. If not, consult a marriage counselor who will probably be able to help you or will advise you to see a doctor or psychiatrist.

Marriage counselors are relatively new. (See page 251.) They concern themselves with every aspect—not only those related to sex—of marital and premarital problems. Marriage Council Institutes call upon the services of physicians, psychiatrists, sociologists, anthropologists, and clergymen. Every large city has a Family Service Association, supported by the Community Chest, which is interested in marriage counseling. If one is not available in your community, write the nearest large city for suggestions. Your doctor, clergyman, the YMCA, YWCA, or a local health officer can usually help you find a marriage counselor. The American Association of Marriage Counselors, Inc., 270 Park Ave., New York 17, N.Y., will provide the names of trained, accredited marriage counselors in or near your community.

If yours is a sex problem, don't be ashamed to ask for help. It isn't easy to solve all the problems involved in expressing one's sexual drive in such a way as to bring about lasting happiness in marriage. You may find that you have been worrying unduly and your difficulty can be solved with relative ease before it develops into anything serious. But even if it cannot be solved easily, it is worth solving. A satisfying sexual relationship is part of every truly happy marriage. It can be achieved by any physically and emotionally healthy man and wife who care for one another.

CHAPTER 15

Health Preparations for Marriage

LET US ASSUME you have made your choice; you have found *the* person with whom you wish to spend your life.

When two people marry, they promise to live together in sickness and in health. But they have every right to believe that neither will endow the other with a serious, preventable illness. This is bound to happen if either of them suffers from a venereal disease; it is almost as inevitable if either of them has active tuberculosis.

To endanger a partner in this way is a crime not only against the innocent loved one but against the children the couple may have in the future.

Many states require a blood test, such as the *Wasserman test*, before issuing a marriage license. This should be mandatory in order to detect syphilis which can be cured—and must be—before anyone has a right to marry. I wish the laws would also require an examination for the other common venereal disease, gonorrhea, which is also curable. In addition I believe that everyone should have an x-ray test made of the lungs to detect tuberculosis, before getting married. Tuberculosis is not, of course, a venereal disease, but it and syphilis are two major communicable illnesses; tuberculosis can be checked and usually cured by prompt medical attention.

THE BLOOD TEST FOR SYPHILIS

Thanks to the excellent educational campaigns of recent years, the public is at last beginning to adopt an enlightened attitude toward venereal disease. People accept blood tests for syphilis as a matter of routine. Today nobody, however saintly, would think of saying, "You needn't test my blood for syphilis," when giving a blood donation or being inducted into the armed forces.

It is extremely unusual to acquire syphilis except as a result of intercourse with an infected person. But it is *possible*. And this disease can

have the most serious consequences, including disablement or death. Still worse, even unsuspected syphilis in a woman can cause her to give birth to children that are blind, crippled, or deformed. Therefore there is no excuse for refusing or neglecting to have a routine blood test to detect syphilis which *is a curable disease*.

THE EXAMINATION FOR GONORRHEA

Unlike syphilis, gonorrhea cannot be discovered by a routine blood test. It starts as a local infection of the genital organs, and its detection requires inspection of these areas, and perhaps a microscopic examination of their secretions. If untreated, it may spread and affect other parts of the body. Though not transmitted to unborn offspring, it may infect a baby's eyes during or after birth, and is a common cause of blindness. *Gonorrhea, too, is entirely curable.*

THE X-RAY FOR TUBERCULOSIS

Tuberculosis may go undetected for a long period of time while insidiously injuring the body and being contracted by others, especially those who have close contact with a tubercular person. Children are especially vulnerable to this disease. There are numerous instances of adults who, not realizing they had tuberculosis, outlived the children they unknowingly infected. It is possible to harbor and spread tubercle bacilli without having any symptoms such as a cough, chest pain, loss of weight, or noticeable amount of sputum.

A chest x-ray often detects hidden tuberculosis. It reveals any suspicious areas which will make further tests necessary. Largely because of the public's growing enlightenment regarding the need to have chest x-rays made at regular intervals, countless cases of tuberculosis have been discovered in time to arrest this disease which was formerly so deadly.

I discuss tuberculosis fully on page 637, syphilis on page 650 and gonorrhea on page 715. If you don't take the time to read about them now, *don't neglect* to have yourself checked for these diseases before you get married. It's the least you can do for yourself, your loved one, and your children.

OTHER HEALTH PRECAUTIONS

In addition to the examinations for syphilis, gonorrhea, and tuberculosis, you should have a thorough medical checkup to determine

whether or not you are suffering from any ailment that should be corrected before the wedding.

Getting married is like starting on a journey that should last the rest of your life. Isn't it sensible to have a thorough medical checkup before you embark? It will enable you to discover whether you're coming down with something that may spoil what should be the happiest time of your life, or whether you should change some of your plans for the sake of your health. Certain heart conditions, for example, make it foolhardy for a man to stay on some jobs, although he could safely do another kind of work. Some illnesses make it extremely dangerous for a woman to have a baby, although she could do so with safety after the disease has been brought under control. Isn't it wise to find out before you're married?

A checkup also provides an opportunity for the prospective bride to discover whether she happens to need a very minor "operation" in order to prevent difficulty and pain in having sexual intercourse (see page 294). She and the prospective groom should ask any questions and discuss any sex problems with the doctor at this time. He, rather than a friend or relative, is best able to provide accurate information.

It is a good idea, especially if you and your fiancé are related, to give your physician all the information you possess concerning the physical and mental ailments from which members of your family have suffered. He will probably be able to set your mind at rest regarding the chances of having children who might inherit a physical or mental defect.

Your doctor may feel you should consult an expert in this field. If he is unable to refer you to one, you can get help from:

HEREDITY CLINIC, University of Michigan, Ann Arbor, Mich.

DIGHT INSTITUTE, University of Minnesota, Minneapolis, Minn.

LABORATORY OF HUMAN GENETICS, University of Utah, Salt Lake City 1, Utah.

OUT-PATIENT DEPARTMENT, North Carolina Baptist Hospital, Winston-Salem, N.C.

DR. CLARENCE P. OLIVER, Professor of Zoology, University of Texas, Austin 12, Tex.

DR. LAURENCE H. SNYDER, Dean of Graduate College, University of Oklahoma, Norman, Okla.

THE HOSPITAL FOR SICK CHILDREN, Toronto, Canada.

DEPARTMENT OF MEDICAL GENETICS, Children's Memorial Hospital, Montreal, Canada.

Many questions naturally cannot be answered simply by correspondence. However, a visit is well worth your while if you are worried about

getting married because of fear that you may pass on some hereditary disease to your children. If there should be a real danger of their inheriting a serious condition, it is much wiser for you to know in advance, so that you can agree to adopt children or, if the risk is slight, accept it (as I suggest on page 816 in discussing calculated risk in health) in the same way you accept other risks in life, including the risk of being run over every time you cross the street.

You notice I said you should tell your physician about the mental as well as the physical illness in your family. I'm sure you realize that mental health is as important as physical. Why not discuss that, and ask your fiancé to do so, with your doctor?

You may tell me, "My goodness, I couldn't possibly ask John (or Mary) to bring me a note from the doctor saying 'This certifies that the bearer is not crazy!'"

You're quite right. Yet I do want to tell you that I have known many a married man and woman who have said after a "breakdown" has brought suffering to the family: "If only I'd known that something should have been done about Max's drinking or Maxine's spells of depression. I thought we'd be so happy together that everything would work out all right." How much wiser it would have been to get help while Max or Maxine was still young and their problems comparatively easy to solve, and before they had families and children who were bound to suffer!

Naturally no doctor can give anyone a slip of paper guaranteeing freedom from all problems of an emotional or "nervous" nature. But it is possible to discover and eliminate the seeds of many problems that may cause trouble in the future.

I urge everyone who is contemplating marriage to read and discuss Part II of this book, or at least Chapter 11 which deals with the normal mind. I also hope all young couples will talk freely and frankly to a doctor, a psychologist, or a marriage counselor. Certain tests can be made to determine mental and emotional health. One of these is the widely used I.Q. (intelligence quotient) test which was devised by the French doctors Binet and Simon, and revised by the American psychologist, Terman. The Rorschach (ink-blot) test is intended to evaluate the emotions rather than the intellect. It was devised by a Swiss doctor who discovered that people reveal their personalities when describing the forms they can imagine from the shapes of ink-blots.

The army tests everyone to discover whether he or she is a good physical and mental risk before he or she is accepted. Surely getting married is as important as joining the armed forces!

What better dowry can you bring to, or receive from, the person you marry than the guarantee of good *physical and mental health*?

The Strategy of Becoming Good Parents

MOST MARRIED COUPLES want, and expect, to have children. It is part of marriage. They may know exactly how many they would like to have, and at what intervals they want to have them. Frequently, they are not so sure, and ask me what I consider best, and how to arrange things to suit their wishes.

Let us assume you are both patients of mine, and have asked my advice. If I know you are physically and emotionally ready for parenthood, here is what I would advise.

I would recommend that you first get completely adjusted to each other and to being married before you have your first child. I would probably suggest that you wait a few months or a year before embarking on the venture of bringing a child into the world. It might be longer. This would depend on you—how long you've known each other, how many rough edges there are to be rubbed off, and how old you are. That's not because a woman has to be young in order to have her first child in perfect safety, but because I'd like you both to be young enough to enjoy your *grandchildren*, too. How long to wait would also depend on the length of time required to get your home settled and to be financially prepared for the baby. At the same time, I would like you to remember that people generally tend to become less fertile as they grow older. If they wait too long, they may find it difficult to have children when they want them, or to have as many as they want.

I would not select any special season of the year for your baby to be born, provided you live in a moderate climate or have modern conveniences. If the climate is severe, it would be better to have mild weather during the baby's first few months in order to give him a good start and simplify things for his mother.

I say "him," but I would not care whether your first child was a girl or a boy. I disagree with people who feel it's best to have a girl

first because "girls are easier to handle." My imaginary couple is going to be able to bring up either a boy or a girl with ease!

When your first child is two or three years old, I would like you to have another baby. There is no magic interval at which to space your children. However, a child is usually in a comparatively "settled" stage of development at about three years of age (see page 389) and this is a good time to add a little brother or sister. How you space your children depends a good deal on your income. If you can afford help with the household, the mother (and, indirectly, the father) will be able to enjoy a second child comparatively early. In other words, I wouldn't want you to have a second child, any more than I would want you to have the first, before you were physically, emotionally, and economically ready for it. Being an only child for a while will not hurt your first-born. Having parents who are tired and worried and harrassed might.

How many children should you have? I think the answer to that question is: as many as you want and can afford—and again, I mean physically and emotionally, as well as financially. Large families are nice, but so are small ones, and if I *had* to choose, I would put quality before quantity. My only suggestion regarding the "ideal" number of children is this: keep an open mind about it, for your ideas may change. We ourselves change with each child we have, because it is a unique experience, and we change with experience. This is to be expected, and natural.

"Speaking of nature," you may say, "why not let nature decide how many children we should have, and at what intervals?"

Being a doctor, I appreciate nature's wonders. But I also devote a great deal of time and energy trying to control some of the things that nature does. Nature works in a large-scale, lavish manner, without concern for the individual. Nature made microbes, some of which are very useful: for example, we would have no cheeses without them. But nature also made some microbes that kill people in the prime of life, and we doctors are constantly working to control these microbes. Similarly, nature has made man and woman, most wonderfully, to bear children, many children, so that some will survive the hazards nature puts in their way. Since we have eliminated a number of these hazards, many of us feel it is not necessary to have so many children.

In ancient days, unwanted babies were left on mountain tops or in the open fields to perish. Civilization has wisely put a stop to that. But civilization will have to go even further, and not permit unwanted children to be cast out, figuratively speaking, so that they perish emotionally and spiritually.

The major religions in this country have recognized the wisdom of controlling nature's lavish manner of providing children. Some form of

birth control, they agree, may be desirable or even necessary. I would like to describe the various methods without, of course, attempting to make any decisions of an ethical or moral nature.

METHODS OF BIRTH CONTROL

In addition to total abstinence, which I shall not discuss here, conception can be controlled by mechanical or chemical means, and by a method which depends on certain biological functions. The latter, the rhythm method, is the only one, except for total abstinence, which is approved at present by the Catholic Church.

1. *The condom.* The condom, a thin flexible sheath, is worn by the man over the penis, in order to prevent sperm from entering the woman's vagina. There is little danger that it will break during intercourse because condoms have been greatly improved since the Federal Food and Drug Administration placed them under its control as medical materials. However, it is important to buy condoms at a good pharmacy and to select a recognized brand. To be absolutely certain, the condom should be tested before it is worn. The "cigarette test" can be made by inflating the condom like a balloon and then blowing cigarette smoke into it. If any trace of smoke is seen curling out, the condom should not be used, for sperm can pass through the most minute hole. The inflated condom can also be placed under water for testing. If there is a leak, bubbles of air will arise.

The condom is highly recommended as a birth preventative, as well as a protection against disease. Some men dislike it because they feel it lessens the amount of sensation that can be experienced during intercourse. Most men find it satisfactory.

The condom should be in place before the male organ enters the vagina. It is risky to use the condom only just before the male orgasm because some sperm may leak out before ejaculation actually takes place. The condom should be applied in such a way that there is a loose space at the tip, in order to permit room for the ejaculated semen. Usually it is advisable to lubricate the condom with K-Y jelly, or some other bland lubricant, before intercourse is attempted, in order to facilitate entry.

Unless the condom is forbidden by religious precepts, I believe it should be used during intercourse with a virgin partner, who is not ready to employ the feminine techniques for birth control, if conception is to be prevented. Similarly, it should be used while the woman is learning how to use contraceptive techniques.

2. *The pessary* (diaphragm, button or ring). These are devices which the woman wears in order to prevent sperm from entering the uterus, or

womb. They are inserted into the vagina and cover the cervix, which is the mouth of the uterus. Buttons and rings used for this purpose are made of plastic, rubber, or metal, and are inserted by the physician. They remain in place for a month or several months. While this may appear to be advantageous, I do not recommend it because buttons or rings may cause irritation, or contribute to introducing infections into the uterus and tubes.

I consider the diaphragm the best mechanical method that women can use to prevent conception. It is made of soft rubber and resembles an ordinary ball sliced in half. The rim is bound by a flexible metal spring. Some time before the sexual act is performed, the diaphragm is coated with a vaginal contraceptive jelly, both inside and out, and inserted. When properly placed, it lies across the opening of the womb and will remain in that position until it is withdrawn from the vagina.

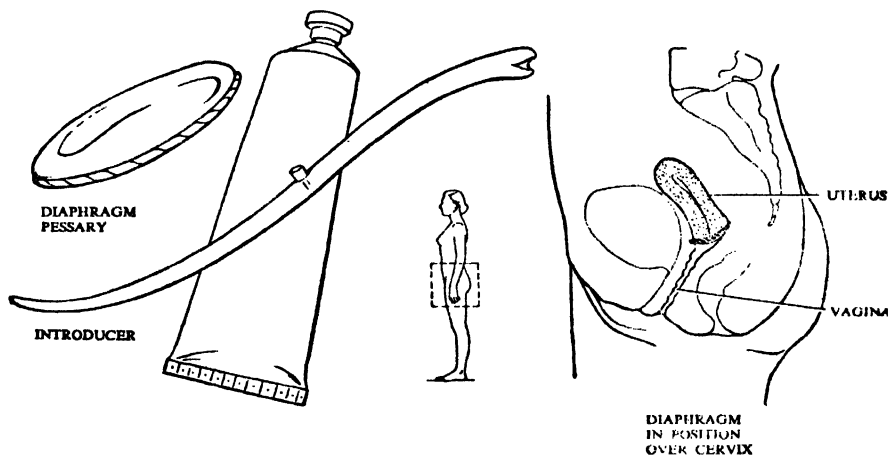


Illustration 16-1. DIAPHRAGM PESSARY.

If the diaphragm is allowed to remain in place for eight hours after intercourse, no douche is needed either before or after it is removed. A plain warm-water douche may be taken for the sake of daintiness. If the diaphragm has been carefully fitted *by a physician*, if directions are followed exactly, and if it is regularly inspected for holes or tears by holding it up to the light and stretching it gently, it should prove reliable, safe, and comfortable to wear. I have found that there is a considerable risk of impregnation while the woman is first learning to use the diaphragm method. Usually, this is because she has not fully comprehended the doctor's instructions. During this period I recommend that the husband use the condom, perhaps for several weeks, until the wife feels com-

pletely sure about the method, and until she has returned to her doctor for a recheck of technique.

3. *The rhythm method.* This is a method of partial abstinence, based on the fact that women are unable to conceive during a part of each month.

Approximately once a month, the human female *ovulates*. During ovulation, one egg cell is liberated from the ovary so that it may be fertilized by the sperm. (See Illustration 5-4, page 99.) The egg cell leaves the ovary, and travels down one of the Fallopian tubes toward the womb. If a sperm unites with the egg, conception takes place. For about two weeks after ovulation, the lining of the womb has been prepared, by building up the tissues with an enriched supply of blood, to nourish the future embryo. If conception does not take place, the unused, built-up tissue breaks down into the bloody discharge known as menstruation. Menstruation occurs fourteen days after ovulation, on the average, although it varies in different women.

The "safe" period is, on the average, about ten days long. It starts with the onset of menstruation and lasts until approximately ten days before the next menstrual period. Usually, pregnancy can result only when coitus is performed during the mid-days of the menstrual cycle, the period four or five days before to four or five days after ovulation takes place.

As the "safe" period varies according to the menstrual cycle, each woman must determine it for herself. Some women are able to determine when ovulation occurs. At that time, midway between periods, they may experience an "intermenstrual" pain, a peculiar, sudden, spasmodic sensation opposite one of the ovaries, followed by a heavy feeling in the lower abdomen, which may last several hours. If they are alert to it, most women will observe an unusual mucous secretion at that time. These indications are helpful in determining the exact day of ovulation. Far more accurate, however, is the rise in temperature which occurs in women at this time, usually between 0.6 and 0.8 of a degree Fahrenheit. To determine the period of ovulation, you should keep a temperature chart for no less than three months. A five-minute temperature should be taken every morning after awakening, while you are still in bed.

The following chart indicates the "safe" period for menstrual cycles of different lengths.

In even the most regular women, ovulation may be hastened or delayed if they are ill or emotionally upset. If this should happen, the calculations will be in error. Because of this possibility, the rhythm method cannot be considered as reliable a means of preventing conception as the condom or the pessary. Of course, it also has the disadvantage of limiting the days for having intercourse.

Its advantages lie in the fact that it does not depend on either the man

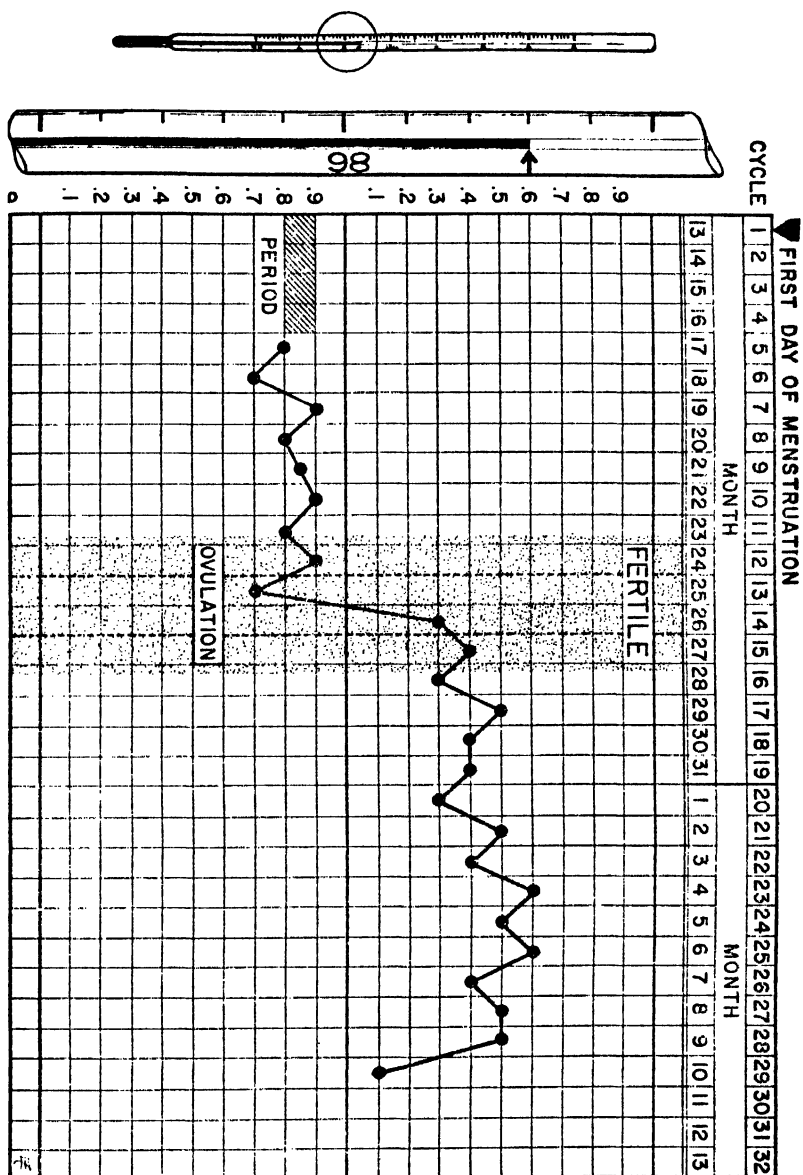


Illustration 16-2. THE RHYTHM METHOD.

A sample chart, showing how to determine the period of fertility. Because the factors involved are apt to vary, this method is not reliable, and a doctor should be consulted before using it to avoid conception. The normal temperature range is shown on the thermometer.

or the woman alone. It is a partnership responsibility. Also, it is not dependent upon a mechanical or artificial device, but on regular periods of abstinence. This makes it morally and ethically acceptable, not only to Roman Catholics but to members of certain other religious denominations.

For absolute safety—when, for example, pregnancy would constitute a serious threat to health or life—I feel that all couples whose religious scruples permit *should use both the condom and the diaphragm-contraceptive-cream technique, and should not have intercourse on the days when conception might take place.*

4. *Other methods of birth control.* These consist of *douches, suppositories, jellies and creams, and coitus interruptus*, all of which are, to different degrees, unsatisfactory.

(a) *Douches.* Douches are used to wash out, or kill, the sperm before conception can take place. Since it is usually impossible to wash all the sperm from the vagina, the emphasis is placed on killing them by means of a chemical. In many instances, sperm have already entered the uterus before the woman has a chance to wash out the seminal fluid. By then it may be too late. Women may find it unpleasant to rise and douche after intercourse, when they want most to relax. As I explained on page 297, sexual desire does not terminate abruptly in most women and they want, and need, some relaxation and affection after coitus is completed.

I advise my patients not to use any of the advertised douches which contain chemicals such as creosol or hypochlorite. As I explain on page 128, I consider it best not to use anything except a little salt or vinegar in a douche except on a doctor's prescription. So-called "feminine hygiene" douches are not effective for contraception and are not necessary for cleanliness.

(b) *Suppositories.* These are small capsules that are made of cocoa butter or gelatin and contain a chemical ingredient that destroys sperm. The suppository is inserted in the vagina a few minutes before intercourse, and is melted by the body heat. The melted, greasy base coats the opening of the uterus and forms a blockade against the entrance of sperm, while the chemicals kill the sperm. Although the principle of the suppository is sound, it has not been found completely reliable in action. Sometimes it does not melt properly before ejaculation takes place, or, when melted, does not completely cover the mouth of the womb. Perhaps in time, this simple, harmless method will be perfected.

(c) *Jellies and creams.* These work on the same principle as the suppositories, being inserted into the vagina with a special applicator. The cream or jelly is intended to block the opening into the uterus and at the same time to destroy the sperm. Since the jellies and creams are already in semifluid form, they have an advantage over the solid suppository in

that they do not have to melt before the crucial moment. The tests on Preceptin and similar contraceptive jellies and creams have been very promising. Your doctor will know if physicians conclusively demonstrate, in the future, that these methods are reliable.

(d) *Coitus interruptus*. This consists of withdrawing the penis from the vagina just before the semen is ejaculated. It is one of the oldest methods of preventing conception, and is mentioned in the Bible in the story of Onan who "spilled his seed upon the ground." It is still widely practiced.

I never recommend it because: (1) even if it is successfully practiced, it is not an adequate safeguard against conception because sperm may leak out before the actual ejaculation takes place; (2) it is usually a cause of tension and strain, placing a heavy responsibility upon the husband who finds it difficult to control his actions while he is highly excited. As a result, he may become irritable or emotionally disturbed, feeling guilty if he fails. The wife's concern lest he should fail to withdraw at the proper moment is a source of fear, tension, and emotional difficulties in her as well; and (3) at best, coitus interruptus does not permit the development of the full tenderness and love during the sexual act that comes when intercourse is completed while the sexual organs are united.

ABORTION

People generally use the term abortion for the early termination of pregnancy by artificial means. We doctors call this an *induced* abortion, but I shall not add that word each time I mention an abortion in this section.

Except in circumstances which make them essential to safety or health, abortions are illegal. Since the procedure is outside the law, it is subject to absolutely no controls. The so-called doctors who perform criminal abortions are usually fly-by-night individuals who have little or no medical knowledge, work under completely unsanitary conditions, and simply trust to luck that nothing will go wrong that can be traced to them. Their death toll is tragically high, and the toll they take in illness and injury, even higher. It is impossible to obtain any reasonably accurate figures because few cases are reported. Sterility may result from an abortion performed many years previously, which may not have been reported and is not suspected as the cause even by the victim herself. Some drugstores carry on a lucrative under-the-counter business in drugs "guaranteed" to induce abortion. These are useless, dangerous, or both, and it is not easy to obtain much information about their effects.

Nor can we discover how much damage is done by the shocking emotional experience a woman undergoes when she has an abortion—breaking the law, destroying a human life, and suffering pain and humiliation.

Some people feel that destroying a human life is never justified. Personally, I respect the religious, ethical, or moral, convictions on which their opinions are based. However, as a doctor, I do not agree with them, and I am sure they will respect my viewpoint as I respect theirs. I feel that the life of a mother should not be sacrificed or endangered, with all that it means to her present and future children, for the sake of maintaining the life of an unborn infant, whose chances of survival are often very slim.

I fully realize the measure of responsibility this places upon the doctor. He must decide whether or not it is necessary to perform an abortion. In some cases this decision is not a difficult one, for example, in the case of a tubal, or ectopic, pregnancy. This is a rare condition in which the embryo develops outside the uterus, in the Fallopian tube which leads into it (see illustration on page 129). Such embryos cannot survive; they die in one way or another, often by bursting through the tube in which they have been growing. At that point the danger to the mother's life is great. Therefore tubal pregnancy is considered a clear-cut indication for terminating a pregnancy by removing the embryo, instead of waiting for it to die and endanger the mother's life.

Most cases are not so clear-cut. The doctor's decision may be a difficult one. But most doctors are forced to make difficult decisions in other circumstances, too. We must do our best to decide wisely.

That is why it is so important for the woman to have a complete medical checkup *before* she becomes pregnant. In most cases, this will indicate whether or not she can safely have a baby, and there will be no difficult decision for her or the doctor to face after she has conceived.

DISEASES WHICH MAY MAKE IT DANGEROUS TO BECOME PREGNANT

Heart disease

Kidney disease, especially Bright's disease and chronic pyelitis

High blood pressure

Diabetes

Tuberculosis

Venereal disease

Some of these illnesses can be cured completely. Others, if they are not too severe or can be controlled, will not necessarily endanger the life of the mother or baby. Even heart disease does not, in many instances,

constitute too serious a problem if proper care is taken. But only a doctor can decide, after a careful examination, whether pregnancy will be harmful or dangerous in each individual case. Personally, I see no excuse for a woman with active tuberculosis or serious heart disease to enter pregnancy because she feels that every woman has the right to become a mother, or ought to be a mother. If she survives the pregnancy, she will probably not have the strength to take care of her baby.

OTHER MEDICAL CONDITIONS

I feel it is most unfair to bring a child into the world if the mother is mentally ill. In most cases, it is scarcely less unfair to do so if the father is suffering from serious emotional illness. Also, I very much doubt the wisdom of having children if they are apt to inherit a disease which may make their lives miserable. Fortunately, such diseases are very rare, and there is, of course, the possibility that a cure will be found for them. I am thinking of *hemophilia*, for example, the "bleeding disease" which is disabling and often fatal (see page 114). A woman with hemophilia in her family will not suffer from it herself, but there is a 50% chance that her sons will, and that her daughters will carry it to pass on to their sons. On page 306, I give a list of organizations to consult if your family doctor is unable to advise you about possible heredity problems.

ADOPTION

Most couples need not be childless because they are unable to have children of their own. Fortunately, adopting a baby is no longer a very risky matter. Responsible agencies eliminate practically all the risk by obtaining information about the real parents, and by examining and testing the child. They try to match the child and the adoptive parents, as far as is possible. Of course, there is a considerable risk if one obtains a baby through unofficial agencies, so stay away from the baby rackets!

If you or your doctor do not know any responsible adoption agency, The Child Welfare League of America, 24 West 46th Street, New York, N.Y., will provide a list of approved agencies. Discuss your feelings about the problems of adoption freely with representatives of the agency handling the adoption. This will help to prevent any reservations in the love you give your adopted child.

This is particularly important if you wish to adopt children even though there is a possibility that you may have some of your own in the future. Probably you have noticed that, up to now, I have been talking

about couples who feel it would be unsafe or unwise for them to rear children. You may even have said to yourself, "He sounds as though everyone who wanted a baby could have one—and the minute they decided on it, too!"

Of course I realize that this is not so. Many couples who want to be parents and are ideally suited for the role are, temporarily or permanently, unable to have children.

CAUSES OF CHILDLESSNESS

MISCARRIAGES

Some women become pregnant but are unable to carry a baby, and repeatedly experience miscarriage or spontaneous abortion.

There are a great many reasons why this happens, including nature's carelessness in not guaranteeing that all seeds are planted properly. Emotional stress, general ill health, malnutrition, and illnesses, including infections and glandular disorders, can cause miscarriages. In some cases, it is comparatively easy to cure these conditions.

As I explain in discussing pregnancy (page 334), many miscarriages can be avoided by refraining from sexual intercourse during the days on which the woman's menstrual periods would occur if she were not pregnant. Sometimes, a week's rest in bed at these periods, especially during the first months, may save the embryo. Rest during the week or so which corresponds to the time of a previous miscarriage is also important.

Other more difficult cases may yield to treatment and care. It is true that some women miscarry easily, and others do not. But don't be alarmed or discouraged by a miscarriage, especially if it is your first pregnancy. It has been estimated that about 16 per cent of all married women in the United States under the age of thirty-five have had at least one spontaneous abortion. Undoubtedly the figure would be higher if we could determine how many "late" menstrual periods were actual early miscarriages.

FERTILITY

To be *sterile* means to have no reproductive power, to be barren. I prefer to use the term *fertile* which can be qualified, that is, one can be relatively fertile, extremely fertile, and so on, rather than the word *sterile* which has such a final ring to it! Actually, many people who consider themselves sterile can reproduce, and often do so to their own surprise.

Infertility can be due to a number of causes. I will start by mentioning one which is not yet fully understood, namely, emotional factors.

Almost all of us know at least one couple who adopted a child because having one of their own seemed impossible, and shortly afterward the wife became pregnant. We don't know exactly why this happens, but the indications are that the act of mothering a baby had an effect on the glands of the woman, and this, in turn, influenced her ability to become pregnant. This suggests to me that emotional factors should be considered seriously when searching for the cause of infertility.

Doctors can usually determine a man's or a woman's fertility. A man may produce few, or many, fertilizing cells. These may have a long or a short life span, and may either be very active or too inactive to make the necessary journey to the reproductive cell, or egg, of the woman. The woman's secretions may be injurious to the sperm, or her tubes may be narrow, or her uterus incapable of forming tissues needed for the egg after it has been fertilized. There are many, many factors that can interfere with fertility. Fortunately, the majority of them can be corrected today, although it often takes time and the skill of specialists to do so.

This is what I suggest, first of all, to childless couples wanting a baby. Since either one or both of you may not be very fertile, give yourselves the best possible chance of conceiving a child. This means that you should have intercourse at the time when it is most apt to result in conception. In other words, *study the rhythm method of birth control on page 313 and practice it in REVERSE*. Many couples have considered themselves to be sterile when they have never actually had intercourse at *exactly* the time conception could take place. The act of intercourse should be performed in such a way as to allow the semen to reach, and be retained in, the inner portion of the vagina. This will be facilitated if the woman elevates her legs and keeps them raised for a short time after the act is completed. No douches of any kind should be used. It is not necessary for the woman to have an orgasm in order to become pregnant. Some men fail to produce a sufficiently large number of sperm cells to impregnate a woman if they have intercourse frequently. Therefore I urge infertile couples to refrain from coitus for a week before the day of ovulation. On that day, they should have intercourse in the morning and again at night.

Be sure to follow these suggestions before you start wondering whether either of you is sterile. If you still don't have a baby, *both* of you should consult a doctor or, better still, a *fertility clinic* which he, your nearest hospital, medical center, or medical school will help you locate. The Planned Parenthood Federation of America, 501 Madison Avenue, New York 22, N.Y., can recommend clinics and private physicians specializing in the treatment of infertility.

Don't, consciously or unconsciously, blame yourself or your partner. Find out what the trouble is. Often it is easily corrected. Sometimes it

can be corrected only with difficulty. If you feel any guilt or anger, a psychiatrist or a marriage counselor (see page 303) will help you. As I pointed out earlier, emotional difficulties can interfere with conception.

If your condition cannot be corrected, if either of you is actually sterile, accept the fact as you promised you would when you said "for better or worse." I assure you it will not be "for worse" if you accept the situation wholeheartedly, and adopt children to love as your own.

Pregnancy and Childbirth

WHEN I WAS a medical student I used to wonder why any doctor would specialize in obstetrics. On one occasion I asked an elderly obstetrician about this, commenting on the fact that he had to be ready to go out at any hour of the day or night, and that there was no time that really belonged to him and his family.

This was his answer: "Obstetrics is the pleasantest as well as the most satisfying of all specialties. Did you ever stop to think that *our* patients aren't sick and miserable, but are going through a normal experience which, with some help from us, is the richest and most thrilling in their lives? *We* almost never have to see a patient die. In fact, when it's all over we usually have not only one patient who is living and well, but three —the mother, the baby, and the father!"

In those days, twenty years or so ago, about 65 mothers died in every 10,000 births in the United States. Today, less than 10 deaths occur in 10,000 deliveries. In the University of Chicago's Lying-in Hospital, only thirteen mothers died during a nine-year period in which 34,000 deliveries took place—and only six of them died from conditions due to pregnancy and childbirth. The discomfort and pain of pregnancy and childbirth have also been tremendously reduced. So forget the horror stories of the past, and be glad you are having your baby now. As the old doctor said, it is the richest and most thrilling experience in a woman's life. And the father? Like the obstetrician, he can have the satisfaction of helping make it so.

PREGNANCY BEGINS

Conception, the act of becoming pregnant, has all the ingredients of a most exciting drama, carried out on a microscopic scale.

In coitus, a healthy man puts forth about a teaspoonful of semen into the vagina of his mate. This semen contains from three *million* to four *million* spermatazoa, or male germ cells, which are also called sperm. Any one of these can fertilize the egg cell of the woman, but *only* one. As the writer, Aldous Huxley, put it, "but one poor Noah may hope to survive."

The spermatazoa face their first hazard in the vagina, whose acid secretions kill millions of them. However, many escape, swimming up through the vagina by means of their whiplike tails. Those with sufficient energy proceed through the cervical canal into the womb, and on into the Fallopian tubes. In one of these two tubes, an egg cell may be waiting, if the female has ovulated, a process I describe on page 99. There is only a short period, no more than a day or so, when this egg cell, or *ovum*, will be in the right place and in the right condition to be fertilized. Sperm can retain their potency for only about 48 hours within the woman's reproductive tract. But if all goes well, that is, if intercourse occurs at or near the time of ovulation and the sperm are of normal activity, the chances are that a male cell will reach the female cell. It penetrates the female cell, and in that moment a new life is created.

Once the head of the sperm has penetrated the egg, the tail, now unimportant, disappears. The vital material which is the father's contribution to the heredity of the offspring is in the forepart of the sperm. The moment a particular sperm has penetrated and fertilized a particular egg, all the characteristics which a child can inherit are determined. Whether your baby will be a blond or a brunet, whether its eyes will be blue or brown, is settled. Nothing you can do will change it. Whether your baby will be a boy or a girl is settled, too. Which it will be depends on the sperm: an egg cell can develop into either a boy or a girl. I hope all prospective fathers will take note of this fact if they are inclined to blame their wives for giving them a girl when they want a boy, or vice versa. Not that there is anything they can do about it, or that science, so far, is able to do either!

Whether or not you will have twins or triplets is also decided very soon after this important moment. They occur more frequently in certain families than they do in others. Your chance of having twins is, on the average, one in 88, of triplets one in 8,000 and of quadruplets, one in 700,000.

Soon after this magical moment of fertilization, the egg cell begins to divide. More cells appear. About five days to a week later, the tiny embryo travels to the wall of the uterus. There it digs out a little hole for itself. Soon a cover forms over it so that it is attached to the wall of the uterus in a protected, completely enclosed pocket. At this stage it

begins to grow rapidly. By about the 28th day after fertilization the embryo is large enough to be seen without the aid of a microscope.

HOW A WOMAN KNOWS WHEN SHE IS PREGNANT

At this stage, the embryo is still far too tiny for anyone to detect its presence. Nevertheless, the average woman is aware of its existence at this time, or suspects its existence. Some women know even earlier. Occasionally, a woman insists she knows almost immediately, before she has had any symptoms definite enough to describe. Perhaps she does. Most women, however, have to wait for the appearance of some of the following signs and symptoms.

Frequently their first clue to pregnancy comes when they observe that their breasts are enlarging, that the nipples are becoming larger or pigmented, that is, darker in color, and that tiny new blood vessels are forming on the breasts. There may be new sensations of tingling and fullness.

Another early symptom may be an overpowering drowsiness, which is not related to fatigue but is a simple, acute sleepiness. Some women awaken early in the morning. Others feel suddenly dizzy. In the past, they frequently used to faint. There may be an increased desire to urinate, with a feeling of pressure in the bladder.

The best-known sign of pregnancy is a missed menstrual period. However, menstruation is sometimes delayed or absent for reasons other than pregnancy, and in rare instances women menstruate for several months after conception. The presence or absence of menstruation is therefore not absolutely reliable as an indication. In fact, all of the symptoms I have been describing can be due to other causes. They can, and do, arise from purely emotional factors such as the fear of, or the hope of, having a baby.

HOW THE DOCTOR KNOWS WHEN A WOMAN IS PREGNANT

In making an early diagnosis of pregnancy, the doctor is guided, as he is in making most diagnoses, by the symptoms which the patient describes to him. If she experiences all the symptoms I have mentioned above, he can be fairly certain she is pregnant. His training will enable him to evaluate some of them better than she can. For example, an experienced doctor can tell a great deal by examining the breasts.

At about the tenth week, his examination will enable him to detect pregnancy with a fair degree of accuracy. By pressing the abdomen in the proper place he can feel the slight enlargement caused by the swollen uterus. The tissues at the entrance to the vagina have a bluish hue. If the fingers are inserted into the vagina, the cervix, or mouth of the womb, can be felt, and it is definitely softer than it was in the nonpregnant state.

However, you can be absolutely certain of pregnancy at the middle of the fourth or the beginning of the fifth month. At that time, an x-ray will reveal the baby's bones; its movements can be felt; and its heart beat detected.

LABORATORY TESTS

Tests have been devised which make it possible to determine pregnancy, in at least 95 per cent of all cases, within two weeks after the first missed menstrual period. If you have any reason for wanting to be certain immediately, it is very simple to have such a test made. All it requires is a specimen of the woman's urine, and about ten dollars! Your doctor or any hospital can recommend a laboratory that performs these tests.

The best-known one is called the A-Z, or Ascheim-Zondek test, after the two German doctors who developed it. In this test, a small amount of urine voided by a woman in the morning is injected into a mouse or rabbit. If the woman is pregnant, certain definite changes will take place in the animal. A similar, more recently devised test is carried out on a particular type of female toad. If the woman is pregnant, the toad will put out a large number of eggs within about eighteen hours. These tests are usually less expensive than those in which a mouse or rabbit must be sacrificed.

THE COURSE OF PREGNANCY

This is what happens to the baby and to the mother after conception has taken place. Incidentally, doctors use the word *fetus* or *embryo* in talking about an unborn baby, usually saying *embryo* when it is in its early stages, and *fetus* later on. Some women seem not to like these words, especially *fetus*, but I hope you won't mind if I use them occasionally instead of the cumbersome "unborn baby."

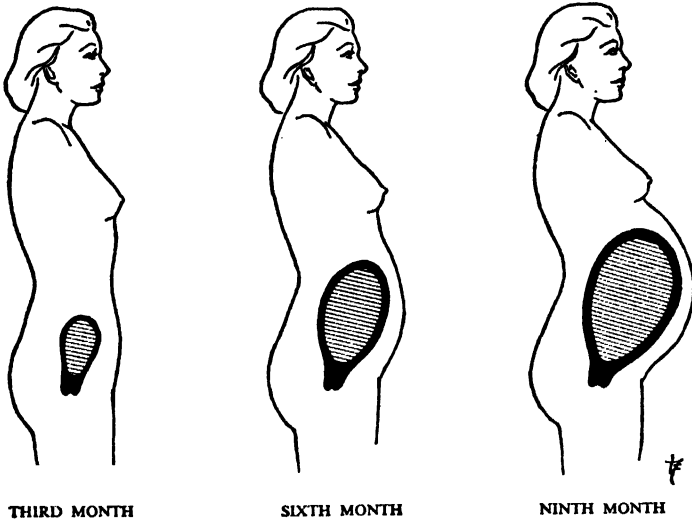


Illustration 17-1. PREGNANCY.

Three stages, showing changes in the position and size of the uterus.

<i>End of Month</i>	<i>The Baby</i>	<i>The Mother</i>
1	The embryo has passed the microscopic stage and is now visible, a tiny piece of tissue.	May be sleepy in the early evening. Frequently has to get up to urinate at night. Breasts may be larger, and the pigmented area increased. Nausea and vomiting may occur.
2	A little over one inch long. The face is formed, the limbs are partly formed. Has the definite appearance of an infant.	Nausea and vomiting may persist. Breasts continue to enlarge, increased blood supply, and bluish veins appear.
3	Three inches long and weighs one ounce. Limbs, fingers, toes, and ears are fully formed. Sex can be distinguished. Nails are beginning to appear.	Abdomen may show signs of enlargement. Tissue at entrance to vagina is bluish. Mother may experience dietary cravings, emotional upsets.

<i>End of Month</i>	<i>The Baby</i>	<i>The Mother</i>
4	About eight inches long, weighs nearly half a pound. Movements can be felt by mother; heart sounds can usually be heard, bones detected by x-ray. Eyebrows and lashes are formed. Skin is pinker, covered with fine hair.	Nausea and vomiting and drowsiness are over. Begins to feel unusually well, very energetic, with a sense of well-being.
5	Twelve inches long, weighs one pound, has hair on head.	
6	Fourteen inches long, weighs nearly two pounds. Skin is wrinkled, and fetus looks like an old man. Will usually die if born at this stage.	Pink or silvery white lines, called <i>striae</i> , may appear on the abdomen and breasts.
7	Sixteen inches long, weighs about three pounds. More fat under the skin. In the male infant, the testicles are in the scrotum.	
8	Eighteen inches long, weighs about five pounds, has a good chance to survive if born now.	Breathing may become difficult. The baby is pushing the diaphragm up and causing shortness of breath.
9	Average length about twenty inches, weighs about seven pounds.	Increased desire to urinate may return, especially at night. The baby's kicking may cause pain. Much shifting and moving about.
At Birth	The head is as large around as the shoulders are across. The infant is less wrinkled than previously, almost smooth, and is covered with a cheeselike material.	(described on pages 347-352)

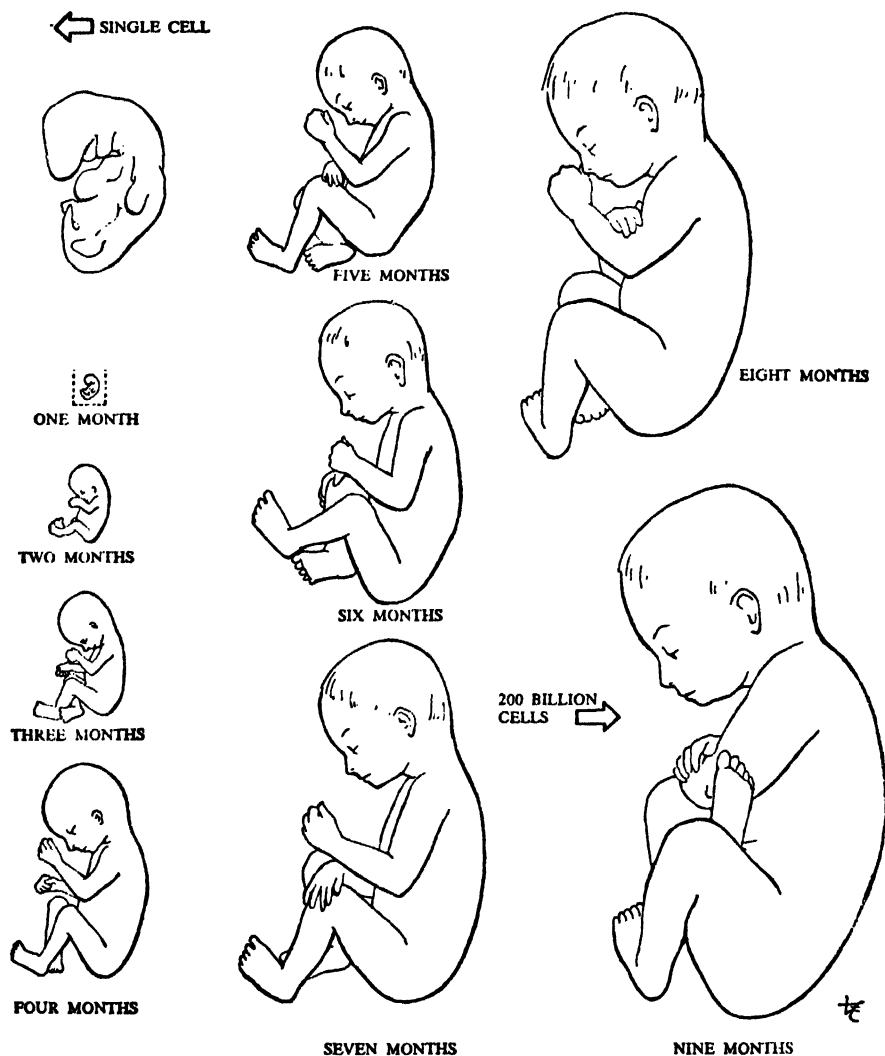


Illustration 17-2. HOW A BABY DEVELOPS.

The umbilical cord has been omitted in these pictures, which show an unborn baby in a characteristic position, at various stages of development.

This chart is intended to give you only the most general idea of the course of pregnancy. Naturally, you want to know a great deal more about it. I hope you will understand that the facts I shall give you are not intended to *replace* the information you will receive from your doctor,

but only to provide the background for it. Your doctor's advice may differ in some details from mine. There usually are several equally good ways of handling situations during pregnancy. Remember, your doctor knows *you*. If you have confidence in him, you should follow his advice. If you don't, you should get another doctor!

WHY YOU SHOULD HAVE A DOCTOR

Until recent years, women often had their babies with the help of only a female relative or a midwife. Not too long ago, women who were expecting babies would choose the doctor they wanted to handle the confinement, and that was usually the last the doctor and the patient saw of one another until the baby arrived. Unless something definitely "went wrong," a woman would not expect to "bother" the doctor during her pregnancy.

One of the chief reasons things seldom "go wrong" today is that the doctor sees the patient frequently from the earliest stage of her pregnancy. *He knows her physical condition and can detect even the slightest indication of a complication.* This, together with his knowledge of how to handle such problems, accounts for the present safety and ease of pregnancy and childbirth. Even during a normal, uneventful, and uncomplicated pregnancy, a doctor's advice is invaluable to the mother. He supervises her diet, the amount and kind of activity she can engage in, and many other aspects of her day-to-day life. A doctor knows how to alleviate most of the discomforts that might otherwise plague a pregnant woman.

I feel that the best advice I can give you is this: as soon as you are fairly sure that you are pregnant, put yourself in the care of a well-trained obstetrician, and do what he, not your grandmother or a neighbor, says you should do. I suggest that you choose a specialist instead of a general practitioner, if this is at all possible, because you will feel much safer in his experienced hands if complications should arise.

If you have a doctor of your own, ask him to recommend an obstetrician. If not, and you live in a city, you can easily find a good obstetrical specialist by following the suggestions outlined in Chapter 26. If you feel you cannot afford a private doctor, find out about the clinics at the nearest hospital. The best and most highly paid obstetricians usually contribute some of their time to the clinic patients at a maternity hospital. Your choice will be more limited in rural areas, but by all means pick a doctor who has had a good basic training (see page 528) plus plenty of experience in delivering babies. Your general practitioner may be very skilled in obstetrics. Realizing the responsibilities they will have,

general practitioners in rural areas often take postgraduate courses in obstetrics to prepare themselves.

THE UNMARRIED MOTHER

Every prospective mother has the right to good care for herself and the child she is bearing. This is just as true for the mother who is unfortunate enough to bear her child out of wedlock. Many tragedies could be avoided if these girls, who are often very young, realized that good care is available in most communities. The Salvation Army and other agencies run by various religious denominations provide, or help the girl to find, a doctor or hospital clinic. They offer advice and guidance as well. So, too, do other organizations such as the Florence Crittenton Homes Association, Inc. There are about 50 branches of this organization in various parts of the country, with headquarters at 608 S. Dearborn Street, Chicago 5, Illinois. Information can also be obtained by writing the National Association on Service to Unmarried Parents, 8615 Euclid Avenue, Cleveland 6, Ohio, or the Children's Bureau, Social Security Agency, U.S. Department of Health, Education, and Welfare, Washington 25, D.C.

YOUR FIRST VISIT TO THE DOCTOR

Many women dread the first visit to the doctor, and leave the office wondering what they were worried about. It is true that this is a very important visit, but don't be disturbed because of that. You are going to see a good deal of your doctor, so it won't matter too much if you don't know the answer to some question he asks you, or make a mistake in answering another.

Your doctor will probably go into considerable detail in taking your medical history: what diseases or surgical operations you have had, diabetes, rheumatic fever, heart disease, kidney disease or tuberculosis. He will question you closely about previous pregnancies, whether you have had a miscarriage or premature birth, and whether your previous labors and deliveries were normal. Your family history will tell him what the chances are of your having twins or triplets. Answer the doctor's questions as fully as you can, but don't be reluctant to admit that you don't know, or can't remember. He will realize that you are flustered rather than scatterbrained! On the basis of the information you give him, he can tell you with a fair degree of accuracy when your baby will arrive (see page 332).

The doctor will then weigh and examine you completely. Perhaps this

is the first time you have had an internal, pelvic examination. You may be embarrassed and tense. The doctor will understand this, and try to cause you the minimum of distress and embarrassment. He will drape you in sheets as completely as he can, and will proceed in a straightforward, objective manner. If you are tense, you may find that breathing in and out hard, with your mouth open, tends to relax your muscles and make the examination less uncomfortable for you and easier for the doctor.

He will examine you from top to toe, listen to your heart, and determine your blood pressure. He will check your breasts carefully, and examine your abdomen. At about the tenth week he may be able to detect the baby's presence as he feels your abdomen. He is almost certain to be able to do so by the fourth to fifth month, at which time he can also probably hear the baby's heart beat. It differs from the mother's in that it beats nearly twice as fast.

Your doctor will take great pains with the vaginal, or pelvic, examination. It is very important for him to know the size and shape and position of your uterus—whether it is normal or turned (*retroverted*). If it is turned, he will give you exercises to bring it back to its proper position. The examination will also tell him whether there are any tumors in the uterus, or if there is any venereal or other disease. Any marked abnormality such as a tubal pregnancy (see page 342) will be revealed. He will probably also take your pelvic measurements. This helps him to decide whether the hard bony structure through which the baby must pass at birth is large enough to let the average child through. If it is too small, or otherwise abnormal, he will consider inducing labor a little early while the baby is still small, or the possibility of a Caesarean operation. (See page 354.)

Several laboratory tests usually accompany the first interview. Your doctor is most anxious to discover any diseases that can be checked before they interfere with your health or that of the baby. (See page 316.) He will test your urine, mainly to discover whether it is free of sugar and albumin; sugar may be an indication of diabetes, and albumin is sometimes a sign of kidney damage. He will test your blood, routinely, for syphilis and for anemia. He will also type your blood to see which group you are in—A, B, AB, or O—since you might need a blood transfusion at some time during your pregnancy or at the time of delivery. Whether or not you are Rh negative (see page 333) will also be determined. He may want you to have a chest x-ray taken, if you have not had one in recent months, to make certain there is no tuberculosis of the lungs.

As you can see, this first examination is a very important one. It will probably be followed by routine monthly visits during the first five or six months of pregnancy. After that, your doctor may want to see you every

three weeks and, in the last two months, about every two weeks. He may possibly ask you to send in a sample of urine by mail between checkups, so that he can be certain there is no new development in the interim.

TALK THINGS OVER WITH YOUR DOCTOR

During these visits, your doctor will give you advice about your life as a pregnant woman. In these talks, he will undoubtedly dispel most of your fears and the ghosts of old superstitions that have been haunting you. He will be able to do a far better job along these lines if you tell him what is on your mind. An obstetrician friend of mine once had a very intelligent patient who was having her first baby when she was thirty-six. It never occurred to him, until the subject came up at the eighth month, that she was convinced her labor would be long, difficult, and dangerous. If she had mentioned this earlier, he could have spared her a great deal of worry. Although it has been estimated that a woman who has her first baby at this age will be in labor about an hour and a half longer than if she were in her twenties, labor is not "a terrible experience" in these days. Women of that age, and even older, can now have babies without difficulty or danger.

Don't be afraid your doctor will think your questions are silly. He would much rather answer them than have you worry needlessly. It will save time and trouble if you make a list of things you want to know, so that you can ask about them at the end of the interview if they have not been cleared up already.

YOUR PREGNANCY

Although the majority of pregnancies run a very smooth course, most women expect to feel different, as well as look different, during the period of *gestation*. This is the technical name for the time the baby spends in the uterus.

One of the first things you will probably want to know is, exactly how long will that be? The period of gestation differs enormously from species to species. The human baby requires nine months, the opossum's baby eleven days, and the elephant's nearly two years! In humans, this period also varies, probably influenced by the length of the mother's menstrual cycle. Most doctors agree that a baby will almost never live if it is born before the 196th day after the last menstrual period, while a pregnancy lasting more than a few days after the 300th day is rare. The *average* pregnancy lasts 280 days.

This means that a fairly high percentage of women will have their

babies a week or two before or after this date. It is sometimes difficult to determine the exact date when the baby was conceived. Your doctor will make a rapid calculation when you tell him the time of your last menstrual period, and come out with the date when you may expect your baby. Suppose you say that your last period was November 16th. He advises you to make a date with your maternity hospital about August 23rd. This is how he does it: he adds seven days to the date of the last menstrual period, and then counts back three months.

This will give you a pretty good idea about when to buy the things you will need for the baby (see page 363) and to settle the question as to arrangements for your confinement, or lying-in, as it was once called, which I discuss on page 344.

CARE OF YOUR UNBORN CHILD

There is little you need to do specifically for your baby. Taking care of yourself is the best way to take care of him. Your thoughts, your activities, and the food you eat will not alter his mental or physical characteristics. If you enjoy museums and concerts, by all means go to them while you're pregnant, but don't drag yourself around in the hope of having an artistic or musical child! Similarly, a craving, fright, or emotional experience during your pregnancy is not going to mark him in any way. The little boy next door did *not* get his buck teeth because his mother was frightened by a horse, and the mole on your cousin's back is *not* due to the fact that his mother had a craving for strawberries!

Don't worry, either, about hurting your baby if you should happen to bump your abdomen, and don't be afraid to sleep in certain positions because you think it will crush him. Your baby is well-protected inside your womb.

German measles. Any serious disease or complication of pregnancy and childbirth is dangerous to your baby *and* to you. However, there is one disease, German measles, which is mild in its effects on the mother, but can seriously affect the unborn child, especially if the disease is contracted during the first or second month of pregnancy. A certain number of babies whose mothers have had German measles may be born with an abnormality, such as cataracts, deaf-mutism, heart disease or mental retardation. This disease may also cause a miscarriage.

It is very important for pregnant women who have never had German measles to avoid anyone who has it. The chances of your getting it again if you have had it in childhood are very slight. But it must be remembered that there is no life-long immunity to German measles. *If you have been exposed to German measles, notify your doctor at once.* He may

want to give you an injection that will lessen your chances of getting it (see page 176).

Venereal diseases. These can have a tragic effect on the baby, even though it is possible for a woman to experience only minor symptoms at the time. *Syphilis* is particularly dangerous. Unless they are treated while the disease is in its earliest stages, nearly half of the women with syphilis deliver stillborn or infected babies. The babies that do survive are apt to be physically or mentally defective. There is no excuse today for bringing such a child into the world, since early syphilis can be cured in about a week by the injection of large doses of penicillin. (See page 650.)

Gonorrhea is less dangerous to the unborn child, but inflicts its damage when the baby is actually being born, while it is passing through the birth canal. If the germs responsible for gonorrhea get into the infant's eyes, they may cause blindness. The routine use of silver nitrate in the eyes of all newborn babies has prevented this disaster in most hospitals and home deliveries. However, there is no excuse for running the slightest risk that it may occur, since gonorrhea, too, can be readily cured. (See page 715.)

The Rh factor.* There is a risk to some newborn babies if the mother happens to be "Rh negative" and the father "Rh positive." A certain substance is present in the blood of about 85 per cent of all white people, and they are called Rh positive; the remaining 15 per cent who lack it are called Rh negative (the percentage differs in dark-skinned races). No problems will result unless the mother is Rh negative and the father Rh positive. Even then, the first or second child will probably experience no difficulties. After that, a real danger exists in a small percentage of cases.

This is what happens. The baby of such parents has a 50 per cent chance of being Rh positive, like his father. If he is, the mother will react to the Rh substance in her baby's blood by producing "antibodies." With each new child, she will produce more of these antibodies. In addition, if she has ever had a transfusion of Rh positive blood, she will produce antibodies which remain in her blood. If there is a high concentration of these antibodies in her blood, they will injure the blood cells of the baby. When he is born, he may suffer from a severe anemia.

The danger to the child is greatly minimized if the doctor has typed the mother's blood, and, if she is Rh negative, the father's as well. He will then know whether to be prepared to give the baby a special kind of transfusion that will, in most cases, save his life and fully restore him to

* Rh is pronounced as two separate letters—R (arrh), h (aitch).

health. In these transfusions, the baby's blood is almost completely replaced with Rh negative blood, a procedure that will not be too expensive if the prospective parents have lined up some relatives and friends who will donate their blood. So you can see how important it is to know in advance whether you are Rh negative!

Miscarriages. If a baby is lost during the first 16 weeks of pregnancy, doctors refer to this as an *abortion*. *Miscarriages* occur from the 16th to the 28th week. A baby born after the 28th week and before the full term of approximately 280 days is considered *premature* (I discuss premature babies on page 355).

It is hard to estimate how many abortions and miscarriages occur, because many of them are not reported. It may be as many as one in every five conceptions.

If you have never had a miscarriage, your doctor will probably tell you not to worry about it, although he may suggest that you refrain from having intercourse during the days when your first three menstrual periods would occur if you were not pregnant. He may also suggest that you take things fairly easy during those days.

If you have had a miscarriage, he will probably suggest that you take additional precautions on those dates, and especially at about the time your previous miscarriage occurred. Women who have had many miscarriages may present a variety of problems which can only be solved on an individual basis. In order to do this, an obstetrician may need the help of a specialist in another field, such as an *endocrinologist* or a *gynecologist*.

Remember, most women do not miscarry easily or often. It is astonishing what the majority of women can endure without miscarrying! So don't worry about it. It is desirable for you to be familiar with this, and other, possible complications of pregnancy (which I discuss on page 340). But they are the exception, not the rule, and modern science can cope with them.

YOUR HEALTH AND HYGIENE

Unlike your grandmother's, your life is not going to be very different now that you are pregnant. Your appearance need not be unattractive, your activities will not be much restricted.

WHAT CAN YOU DO DURING PREGNANCY?

This varies a great deal with different individuals. Those who enjoy their work, or who must work because of financial reasons, can usually

stay at their jobs, provided these are not too strenuous or physically exhausting, for example, office work or some other reasonably sedentary position. If your doctor does not object and your health is good, you may even be able to continue to work until the eighth month, provided, of course, that your boss has no objection! Many women feel that working keeps their minds off their "symptoms." Others, unfortunately, find it too tiring. I would advise against starting a new, or strenuous, job after you have become pregnant.

Whether or not you work, your activities need not change a great deal. Many doctors feel that it is safe to engage in sports such as golf, riding, tennis, and dancing, as long as you do not become overtired. Some doctors feel that it is wise to engage in only mild forms of exercise during the early stages of pregnancy, when the danger of a miscarriage is greatest. They almost invariably recommend walking, housework, and a normal social life for the healthy pregnant woman.

There is no reason why a pregnant woman cannot drive a car or even take motor trips as long as her figure does not become too cumbersome. However, if you go on a long trip, stop the car at least every hour and a half, and get out and move around for a few minutes. And, of course, obey the cardinal rule—"Do not overtire yourself." This holds true for all forms of travel. If you have a tendency to seasickness, or if the weather is apt to be uncertain, don't take a trip by boat or airplane.

Always consult your doctor before undertaking anything new, or when you are in doubt.

Keep occupied. Try to get some fresh air and exercise every day; but don't overdo it. Get as much *sleep* as you need.

CLOTHING

Fortunately, the modern woman can dress becomingly in clothes that conceal her condition during the early stages of her pregnancy and keep her from looking ungainly later on. Practically the only prohibition about clothing is that it should not be too tight or uncomfortable in any way. Round garters constrict the blood vessels of the leg, so wear a garter belt instead. There is a comfortable type of belt which is worn below the protruding abdomen. Wear comfortable, safe shoes. Remember that the extra weight you are carrying is highly localized and will shift your center of gravity considerably, so that high heels will not support you properly during the last months of pregnancy.

Whether or not you wear a maternity corset, and what care you give your breasts, depends entirely on your doctor's judgment. Some doctors recommend a corset after the fourth month, while others leave it up to the patient. A well-designed maternity corset is not intended to disguise

your figure. It may even make you look larger. Essentially, it is a sling to support the abdomen. A good corset can do wonders in relieving back strain and fatigue. Most women are more comfortable if they wear a firm brassiere that supports but *does not flatten* the breasts. However, wearing a corset or brassiere usually makes little or no difference in the way a woman feels or looks after she has had her baby. The recovery of her youthful, prepregnancy figure depends mainly on the tone and elasticity of her muscles, and on how much weight she has gained.

PERSONAL HYGIENE

There are no prohibitions about washing or bathing the entire body, including the genitals. Tub baths are sometimes forbidden in the last months of pregnancy because of the danger of infection. Shower or sponge baths are always safe.

Douches are unnecessary (see page 128). *Never take a douche during pregnancy unless your doctor recommends it.*

Some doctors recommend rubbing lanolin or cocoa butter into the nipples in the last few months of pregnancy. This helps to soften them and prevent cracks from occurring during the nursing period. However, most obstetricians consider this unnecessary and merely advocate ordinary cleanliness.

ALCOHOL AND TOBACCO

Most doctors permit their obstetrical patients to smoke and even to drink alcoholic beverages occasionally and in moderation. There is no evidence that small amounts of tobacco and alcohol have a harmful effect on the unborn child. When a mother smokes, the fetal heart beats a little faster, but there is no indication that this hurts the baby. Moderation is essential. It is up to you to decide whether it would be easier to be moderate or to cut out smoking entirely.

SEXUAL RELATIONS

Aside from the danger of miscarriage during certain days of the month (see page 334), sexual intercourse is safe during the first seven to eight months of pregnancy. Again, moderation is essential. However, *intercourse is not safe during the last six weeks*. This is due to the fact that bacteria are forced into the mouth of the womb during the sexual act. If labor should begin early, there is a real danger that these bacteria will cause an acute infection. During pregnancy, a woman's sexual desire is unpredictable. It may be heightened or decreased. Don't worry

about it. Whether or not you have an orgasm will make no difference to your baby. You may find, especially during the later stages, that you prefer some position other than the one you usually assume (see page 300).

EMOTIONAL REACTIONS

You may find that you are on edge and emotional, especially during the early months of pregnancy. You may be unusually sensitive and irritable, so that you become upset and cry if your husband seems to speak crossly to you. The demands and fretfulness of your other children may seem almost too much to bear.

Try to take this in your stride. It isn't anybody's "fault." Our bodies and emotions are influenced by special chemicals called hormones (see page 86). During pregnancy, the body has more of certain hormones than it had before, and less of others. This unbalance may cause exaggerated emotional reactions. Remind yourself that they are only temporary. After the first few months, if you are reasonably stable emotionally, you will recover your calm disposition. However, pregnancy is a strain, and, occasionally, in very unstable individuals, severe nervous reactions may result. If you are at all concerned about this, be sure to consult your doctor who will reassure or advise you.

DIET AND WEIGHT

In the first few weeks of pregnancy there may be a slight loss of weight, especially if there is any "morning sickness." After this passes, the increase begins, and it usually becomes a problem to keep the weight down.

Being overweight puts a strain on everyone (see page 41). This is especially true of the pregnant woman. You will be much more comfortable, too, if you are not carrying around excess fat in addition to your baby. Besides, it is much easier to avoid getting fat than it is to reduce. Many young women never recover their trim figures after pregnancy because it is so difficult to get rid of those extra pounds after the baby has arrived.

If you are of normal weight, twenty pounds is a good amount to gain during the course of your pregnancy. If you are underweight, the doctor may decide that this is a good time for you to pick up a few permanent extra pounds. But if you are already too heavy, he may actually put you on a reducing diet!

Many pregnant women overindulge themselves because they feel they have to "eat for two." Actually, you should continue to eat for one,

enough but not too much. Watch both the quality and the amount of food that you eat. You should consume about two thousand calories a day, (see page 34). These should come mainly from meats and other proteins, green vegetables, and fruits. Starches, fats, and sugars—bread, rice, potatoes, spaghetti, butter, and desserts—should usually be restricted. Most nutrition experts believe that the pregnant woman needs one and a half times as much protein as the nonpregnant one. This is to supply the demands of fetal and maternal growth and tissue replacement. The value of fruits and vegetables lies in their mineral and vitamin content.

Your doctor may give you a prescription for capsules to supply extra iron and thus prevent anemia. He may urge you to drink at least a quart of milk a day because of its vital calcium content, suggesting skimmed milk if you need to watch your weight. This contains just as much calcium as whole milk. Many doctors prescribe vitamin capsules to guarantee that you consume ample amounts of the essential vitamins.

For (1) an ideal, and (2) an adequate, low-cost basic diet consult Tables 1 and 2 on pages 25 and 26.

FLUID

Drink plenty of fluid, at least eight glasses a day. This may be water, but anything liquid—milk, coffee, tea, fruit juices, and soups—counts too. Avoid fattening beverages like sodas and soft drinks. You need a large amount of fluid to wash the kidneys and bladder through frequently. This greatly reduces the danger of infection in the urinary tract. You may have heard of women who retain an unusual amount of water and suddenly become large and puffy in appearance. This is not due to the fluid they have been drinking, but is a sign that something is wrong, and it requires the immediate attention of the obstetrician (see page 342). He may be able to control it simply by having you cut down on or eliminate *salt*. But it may be something serious.

"PROBLEMS" OF DIET

You may experience acute *cravings* for certain foods such as pickles, lobster, candy. Almost any food may be the guilty one. In recent years, this craving seems to be less common. Maybe our diets are more adequate today. However, don't be upset if you have an intense desire for something you may never have been interested in before. Provided it is edible, it will do no harm to eat it. Also, it won't hurt you or the baby if you *don't*! At any rate, the capricious taste will surely pass.

Nausea and vomiting. "Morning sickness," the nausea and vomiting which usually, but not always, appear in the morning, is very common in the early months of pregnancy, although more than a third of all pregnant women escape it completely. Sometimes it consists of little more than a mild intestinal uneasiness or indigestion. In severe cases, the pregnant woman vomits and feels miserable. Fortunately, it seldom lasts beyond the third month, although in rare cases it can persist, or be so extreme as to require hospitalization.

There are many ways to prevent or minimize morning sickness. If possible, try not to think about it, and it may pass. I say "if possible," because a middle-aged mother I know tells me she still dreams that some day she will find her obstetrician in the throes of seasickness and get her revenge by telling him brightly not to think about it! Here are some suggestions of a more concrete nature. Select the ones that you think will apply to you.

Have some dry crackers, a thermos of weak tea, or whatever appeals to you, on your bedside table ready for you to eat before you get up. Lie still afterwards for a while. Then get up and have breakfast. Or, if possible, have breakfast in bed!

Eat small meals frequently, six or even seven times a day, instead of three big ones.

Although you need fluids, they may not "stay down" on an empty stomach, so eat "dry" foods first, sipping fluids in small quantities.

Rest after eating. Lie down for twenty minutes or so after even a small meal. If nausea is worse in the evening than it is in the morning, try getting more rest. Some women need a great deal of sleep in the early months of pregnancy. Lying down whenever you feel squeamish often staves off nausea and vomiting.

Avoid sights and smells that seem nauseating to *you*. Even if you used to like cigarettes, they may disturb you now.

Greasy foods, butter, and fat are apt to cause distress. Plain baked potatoes often turn out to be least offensive. Wheat germ may help nausea, so try to include whole-wheat bread or cereal. Cucumbers, cabbage, cauliflower, spinach, and onions are frequent offenders.

"Heartburn" or indigestion. Heartburn has nothing to do with your heart. It is caused by your intestines. Omitting the gas-forming foods, such as cucumbers and cabbage, listed above, often helps. Try cutting down on desserts and rich foods, too. Heartburn can sometimes be *prevented* by taking a tablespoonful of cream half an hour *before* a meal. Strange as it may seem, this works—by stimulating intestinal activity, which may be sluggish during pregnancy, before you eat. You may find relief after taking a level teaspoonful of milk of magnesia. It works

far better than bicarbonate of soda (baking soda) which many doctors do not recommend during pregnancy.

Constipation. Most women are no more prone to constipation during pregnancy than they were before. Usually it can be corrected by diet. Avoid irritating bran, however. Fruits, including the time-honored prunes, and vegetables are much better, although a coarse cereal like oatmeal is also good. Cold fruit juice or a glass or two of cold water before breakfast is helpful. A mild laxative like milk of magnesia is not harmful, but don't get into the habit of taking laxatives, and *never* take any stronger laxative without consulting your doctor. *It isn't necessary for you to have a bowel movement every day.* Too many people worry about their bowel movements. Try to be relaxed and casual, as well as regular. (See *Constipation*, page 746.)

Teeth. Many women still believe the old saying "a tooth for every child." This is not true. Don't blame your baby if you find an unusual degree of tooth decay. It is probably due to the fact that you are indulging a fancy for sweets, or that your diet is inadequate. Be sure to visit your dentist so that your teeth will be in good shape while you are pregnant. This is important, because it will eliminate any possibility of an infection arising from tooth decay.

DISCOMFORTS AND COMPLICATIONS OF PREGNANCY

HEMORRHOIDS (PILES)

These may appear or become exaggerated during pregnancy. Your doctor can help you. See page 755 for suggestions.

VARICOSE VEINS

As I suggest on page 757, avoid round garters or anything that restricts the circulation in your legs. Get off your feet as often as you can, and avoid standing still for any length of time. If these veins are marked or troublesome, your doctor will probably recommend a bandage or may treat them by means of injections.

BACKACHE

This condition may be due to many things, as I explain on page 671. If it is caused by unusual muscle strain because your heavy abdomen is

pulling on unused muscles, it will be relieved by rest, a maternity corset, and sensible shoes.

SWELLING OF THE FEET AND ANKLES

If this does not disappear after you have taken extra rest and remained off your feet for a day or two, your doctor should be consulted. It can mean something serious that requires medical attention.

SHORTNESS OF BREATH

If this becomes so extreme, at any time during your pregnancy, that you cannot climb a short flight of stairs without discomfort, be sure to see your doctor. If a mild case interferes with your sleep during the later stages of your pregnancy, using several pillows so that you are half sitting and half lying will bring relief. You may require a mild sedative, which the doctor will give you, in order to prevent *insomnia* from this or similar causes during the last two months.

DANGER SIGNALS

Like all the rest of us, you may develop some illness while you are pregnant. Because pregnancy is an added strain, and because you have your baby to consider, it is most important for you to be familiar with the *danger signals* I discuss in Chapter 28. There are a few conditions to which pregnant women are more than usually susceptible and some, such as miscarriage and complications of childbirth, which the rest of us are spared.

CYSTITIS AND PYELITIS

Cystitis is an infection of the bladder, in which bacteria, pus, and sometimes blood are found in the urine. The symptoms are frequency, the desire to urinate often, and pain and burning sensations on urination. It responds quickly to sulfa drugs and specific antibiotics, and drinking large quantities of fluid. It should be treated immediately as it may lead to pyelitis. *Pyelitis* can develop into a very serious condition if not treated, because it is an infection of the kidney. (See page 610.) Luckily, the sulfa drugs and penicillin or other antibiotics are very effective. The symptoms are *chills and fever*, back pain in the region of the kidneys, and sometimes pain on urination, and too frequent urination.

ECTOPIC (TUBAL) PREGNANCY

In this condition, the fertilized ovum has burrowed into the Fallopian tube instead of the womb. Since the tube is small, the egg is apt to burst through after it reaches a certain size. This is called a *ruptured* ectopic pregnancy. The tube may also abort the fetus by pushing it out. The symptoms are *vaginal bleeding* and severe pain on one side. Usually surgery is necessary to remove the damaged tube and stop the hemorrhage. With *prompt* recourse to surgery, mortality in this type of pregnancy is greatly reduced. Removing one tube does not prevent a woman from becoming pregnant again, although in a small percentage of cases she will have another ectopic pregnancy.

Since bleeding can indicate an ectopic pregnancy, a miscarriage, or premature labor, it is essential to report it immediately to your doctor. Delay in seeing your doctor for even the slightest amount of bleeding can endanger your life or that of your baby. He can often prevent a threatened miscarriage.

TOXEMIAS AND ECLAMPSIA

These conditions are fortunately very rare. Very little is known about their cause. *Eclampsia* is the more serious form, and can be very dangerous. There is no specific medicine to cure eclampsia, but careful medical attention along a number of lines has saved many women with this condition. Even more important, prompt attention to the symptoms of toxemia will usually prevent the patient from developing eclampsia. This treatment varies in individual cases, but usually depends to a large extent on the regulation of salt intake, and on rest.

Because these conditions can be serious, it is important to notify your doctor immediately if you observe any of the following danger signals of toxemia, *even if you are feeling well*:

Puffiness about the face and hands

Persistent vomiting

Severe, persistent headache

Disturbances in vision (blurring, dimness, spots before the eyes)

Very rapid gain in weight

The doctor has other ways of detecting toxemias in advance, by taking your blood pressure and examining your urine. That is why you should have these tests made, and cooperate with him wholeheartedly, even if he gives you instructions that seem unduly cautious to you. These illnesses are usually associated with the last three months of pregnancy,

and are more common in women who are pregnant for the first time. Serious trouble is prevented by good care.

PLACENTA PREVIA AND PREMATURE SEPARATION OF THE PLACENTA

These complications are also rare, and little is known about what causes them. Both occur in the last three months of pregnancy, and are accompanied by vaginal *bleeding*.

In *placenta previa*, the placenta or afterbirth is misplaced. Instead of being attached high up on the uterine wall, it is down near the cervix. If some of the placental tissue is torn by the expansion of the cervix, which is the mouth of the womb, pain and premature labor will result. The bleeding which results can be serious for the baby.

Premature separation of the placenta is caused by a hemorrhage just below its point of attachment. A blood clot forms and loosens the placenta from its mooring.

In both these conditions, immediate medical care is necessary, for they are apt to be fatal to the baby. Fortunately, the danger to the mother has been greatly reduced by the use of blood transfusions. With immediate care it is frequently possible to save the baby as well, often by performing an operation such as a Caesarean section.

Maybe you have almost decided you don't want a baby, after reading all the complications that can occur. Don't be dismayed. These complications are the exception rather than the rule. For example, the danger from the Rh factor is about 1 in 600; from placenta previa and premature separation of the placenta, about 1 in 200. Now that you know about them, you will run even less risk. You will be prepared to cooperate with your doctor and avoid even the slightest danger by either preventing any complication or, in the very unlikely event that one does occur, taking care of it in time.

PREPARATIONS FOR CHILDBIRTH

Long before your baby is due to arrive, you will undoubtedly have made arrangements for your confinement. The tentative date your doctor gave you at the first interview has been confirmed or corrected on the basis of later indications. You have talked over the actual childbirth with your doctor, settling the question of preventing or controlling pain.

HOME VERSUS HOSPITAL

Most of our mothers or grandmothers had their babies at home. Would you be pampering yourself by spending the money on a hospital? Of course not! Millions of babies are born at home. Ninety-nine times out of a hundred everything goes perfectly. But you have every right to think about that hundredth time, too! Most doctors feel you would be better off in a hospital under that circumstance. We are used to working in hospitals where we know that everything we could possibly need is ready for us in even the most unlikely complication—transfusions, oxygen tanks and special anesthetics.

We feel that you will be more comfortable in a hospital, and will get better care. It is particularly difficult for a woman with other children to have a peaceful confinement at home, even though there is someone to take over for her. Somehow there are always problems which only she can settle! And it is very important for her to be adequately rested after childbirth before she assumes the responsibilities of home, plus the care of a new infant.

Although I think it is wiser for you to have your baby in a hospital, either you or your doctor may have good reasons for disagreeing with me. If you decide, with his advice, to have your baby at home, be sure to follow all his instructions in making preparations for the delivery.

If you are going to the hospital, decide well ahead of time, in the first months of your pregnancy, if possible, how much you can afford to spend, and make your arrangements accordingly. If you can afford a private room, are you sure you want to spend the money on it, instead of on something else? A semiprivate room or a ward may suit you just as well. I hope you will read at least part of the next chapter (page 360) before you make up your mind about expenses.

If you cannot afford even a ward, don't be sensitive about free, or partly free, hospital care. Being sensitive under such circumstances is the one luxury you cannot afford. The important thing is to go to a *good* hospital (see page 559).

The rooming-in system. You may have heard of the rooming-in system which some hospitals provide. Like many doctors, I think it is an excellent one.

Many of us believe that the act of birth is probably a shocking experience as far as the child is concerned. Having lived comfortably in his mother's womb for nine months, he is suddenly on his own, forced to adapt to a great many new stimuli in a strange world. He is exposed to light, air, drafts, hunger, pain, and many other new sensations. The rooming-in system makes this transition easier for him.

Chiefly for their own convenience, hospitals usually keep all the babies in one large nursery. After the mother's flow of milk has been established, her baby is brought to her every three or four hours for a feeding. Some babies are hungry before that time, and cry for an hour or two.

In the rooming-in system, the baby shares his mother's room, from a day or two after he is born until they leave the hospital together. The crib is arranged so that she can reach her baby without getting out of bed. She helps to care for him, changes and dresses him, feeds and comforts him, and in general learns to understand him. We can only guess, but with some degree of accuracy, that this makes the baby happier than he would be in the nursery. The mother, too, profits from this intimacy. The only visitor she is permitted is her husband, and he, too, comes to feel at home with the baby.

Of course the system imposes certain hardships on the mother. She does not have the vacation she probably needs. But I feel the advantages usually outweigh the disadvantages, provided the added expense is not a problem.

PAIN DURING CHILDBIRTH

Whether or not a woman admits it, she can hardly fail to give some thought to the question of the pain connected with having a child. How bad will it be? From what some women have told her, it must be unimaginably terrible, beyond description, although they usually manage to describe it in great detail! Others say they didn't feel a thing. Still others say it was unpleasant but perfectly bearable. Where does the truth lie? *Don't* be reluctant to talk this over with your doctor. There is no doubt that fear and tension aggravate pain, especially labor pains, and that they are far less intense if the patient can relax.

Natural childbirth. An English doctor named Grantly Dick Read has worked out a method about which you may have heard, called natural childbirth, or childbirth without fear. Women in primitive countries usually have their babies with little difficulty. They may stop working in the field to have a baby, and almost immediately return to their tasks. Why, he reasoned, shouldn't civilized women be just as well off?

In order to make this possible, he helps the prospective mother, from the earliest stages of her pregnancy, *emotionally* and *physically*.

Emotional preparation consists in ridding the mother of all her fears. She learns exactly what happens during her pregnancy and at each stage of the delivery. She knows just what to do to keep the pain at a minimum.

Physical preparation consists in doing exercises to limber up the muscles she will use when she delivers her baby.

During the entire pregnancy, she has the help and support of her doctor and his staff. Someone is with her throughout the actual period of labor—her husband, the doctor, or a nurse, to massage her back, tell her what to do, and in general give her warm, friendly support and encouragement. Anesthetics are available if she wants them.

Doctors who use this method report that nearly half their patients do not want an anesthetic during the labor period. Some require it at the final moment of delivery.

Women who have had their babies by this method are usually very enthusiastic. They find it deeply satisfying to be conscious throughout the delivery, and thrilling to know the exact moment they have given birth, and to see and touch the baby the instant he is born. Without doubt, it is an incomparably beautiful experience.

However, the use of this technique does require a great deal of time from the doctors and the nursing staff, who must be well-trained and convinced of its advantages.

If you have a choice, and decide to use this system, be sure you are making your own decision. Don't do it because you think you should. There are valid arguments against it. As one young mother put it, "I am not a primitive woman. I can't imagine myself doing a day's work in the fields under the best of circumstances—or my husband, either, for that matter!" It is true that most of us are not accustomed to hard physical work of any kind, and let me remind you that childbirth is work! That is why it is called *labor*. Then, too, in primitive societies, the baby's father and mother are usually of the same size, which means that the baby will undoubtedly be built to scale, and therefore the right size to pass without much difficulty through her birth canal.

I feel that Dr. Read has taught, or reminded us of, some very important ways to make childbirth easier, and that his techniques are very helpful. That is one reason why I am going to tell you exactly what happens when a baby is born. Of course, you can skip that section if you'd rather not know! Before I do that, however, I will discuss other methods of reducing or preventing pain.

Anesthesia. If you are interested in anesthetics, or pain killers, turn to page 573, where I describe the major methods of preventing pain. Most doctors use some form of anesthetic, or analgesic, or both, during childbirth. An *analgesic* lessens the sense of pain: aspirin is a mild analgesic.

All these methods have their virtues and their faults. With skillful administration, the faults can usually be avoided. That is why an ex-

perienced doctor is needed during childbirth. Many doctors use analgesics during the first period of labor, to help the mother relax, and sleep or doze between pains. Most doctors use an anesthetic during the period when the baby is actually coming into the world.

Your doctor will know what to do for you. Have confidence in him. But, by all means, talk things over with him before the delivery, so that your mind will be at ease. While you are in labor, let him know if your pain is so intense or unbearable, to you, not to some mythical "strong woman," that you need relief. He will give you something to lessen it or to "put you out" completely.

WHAT TO TAKE TO THE HOSPITAL

Having made your arrangements with the hospital, you may as well get ready the things you will need there. Pack the following:

A sanitary belt. The hospital will furnish the pads.

Toilet articles: tooth brush and paste, comb, brush, hand mirror, toilet water, cosmetics, and so on.

Some nightgowns. The hospital will furnish these, but after the first day or two, you'll want your own.

Bed jacket, bathrobe, bedroom slippers.

Some brassieres that you can wear while nursing.

A few articles for your spare time: books, pen, writing paper, and stamps; a pad on which to make lists for your husband of all the things you didn't get around to doing before you left!

Of course, it is a good idea to do everything yourself if you can, so why not make a list ahead of time and attend to the items on it before you are ready to go?

How will you know when the time has come?

LABOR BEGINS

Usually you will know you are in labor by one or more of the following

1. "Show": this is the passage of blood-tinged mucus, usually only a small quantity, from the vagina.
2. "Breaking of the bag of water." This rupture of the membranes may be indicated by a gush of water from the vagina, or by a slow leakage.
3. Labor pains.

The first two indications are quite plain in most cases. Always call your doctor if either of them occur. Labor contractions are harder to identify for a woman having her first baby. She is apt to be fooled by "false labor," which usually consists of contractions of the uterus at irregular intervals, with or without pain. True labor pains are:

1. *Painful.* The pain may be slight, but it usually increases to a peak and then fades away, so that it can be distinguished from an ordinary "twinge." The pain is cramplike at the beginning, when it seems to be located in the small of the back. In a few hours it moves around to the front.
2. *Regular, or rhythmical.* Even at the beginning, true labor pains are usually spaced quite regularly, with a pain-free period between each one.
3. *Accompanied by a contraction of the uterus.* This can be easily felt by placing the hand on the abdomen.

It is often difficult to distinguish between true and false labor contractions at first. Of course, if either of the other indications of labor appears, the question is solved. Otherwise, it is best to wait, in the case of a first baby, until the interval between the contractions has grown shorter and they have increased in intensity. The doctor has probably told you to call him if the contractions come at every fifteen, or ten, minutes. Even then he may want you to wait a little while so your stay at the hospital will not be so long. Don't worry if the membranes rupture before labor contractions set in. The stories you've heard about the difficulties of a "dry labor" are untrue. In fact, such labors are very often easier.

INDUCED LABOR

If, for some reason, the doctor feels he should start or speed up the beginning of your labor, for example, if the baby is past due and quite large, he can rupture the membranes quite easily. Labor usually occurs shortly after this.

He may also speed up the labor by giving you an enema, or a medicine such as castor oil and, perhaps, quinine.

Never attempt to speed up labor yourself!

THE STAGES OF LABOR

THE DILATION PERIOD

The womb which holds the baby is like a large rubber bottle with a very small neck, almost closed. The neck is about a half-inch long. In order for birth to take place, the mouth of the bottle must be stretched

to a diameter of about four inches to make room for the passage of the baby. The walls of the womb are little more than a powerful set of muscles. At a certain time, for reasons we do not know, the muscles begin to contract and force the baby downward. Gradually the mouth of the womb, the cervix, is stretched until there is room for the baby to pass through.

While this is happening, the mother experiences labor contractions. At first, they are fairly far apart and last for a very short time. As labor progresses, they occur more often, are more intense and last longer. At its worst, a labor contraction is an extremely intense, grinding type of pain. Fortunately its peak is short, and there is a blessed interval between contractions during which the mother can rest. Most new mothers are surprised by this interval, since pain of other kinds does not disappear so completely. Being sufficiently relaxed to take advantage of these respites makes a tremendous difference to the woman in labor.

Another reason why it is so important to be relaxed is that this encourages the cervix to dilate more rapidly. If a woman is restless during this stage of labor, it may help her to walk around a little. Sometimes breathing through the mouth, panting like a puppy, helps to relieve the tension during a contraction, and thus lessens its intensity. I feel certain that if women will give some thought, during their first, mild labor contractions, to discovering what makes *them* feel best, they will be well rewarded. At any rate, *don't* fight against the pains. Incidentally, there is nothing a woman needs to do to help during this period.

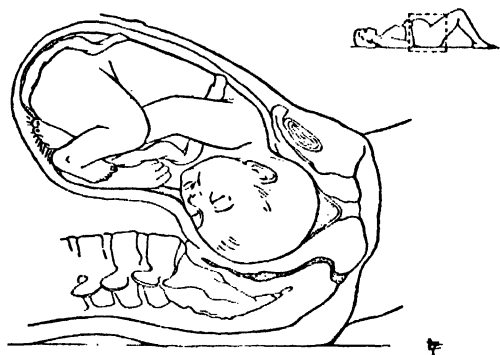
THE EXPULSION PERIOD

After the cervix is fully dilated (opened) the baby must be pushed out through this narrow and resistant birth canal. Here the mother can help by holding her breath and bearing down as though she were having a bowel movement. Even though the doctor gives her a whiff of gas to lessen the pain which is generally intense at this time, she is usually conscious enough to bear down.

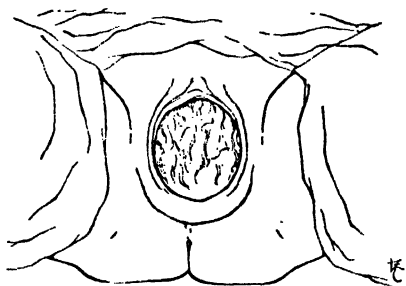
The doctor may use *instruments* to help the baby into the world. Many doctors routinely use "low forceps" at the last moment to guide the baby's head through more readily and rapidly than it would go otherwise. This is entirely safe for the baby.

The doctor may also perform an *episiotomy*. There is a strip of tissue between the vagina and the rectum which is called the *perineum*. In the final moment of birth, the baby's head stretches this tissue, which may rip. Although the tear may be a slight one that will heal readily, many doctors prefer to prevent this from happening by cutting the tissues themselves. This makes a neat cut instead of a possibly jagged

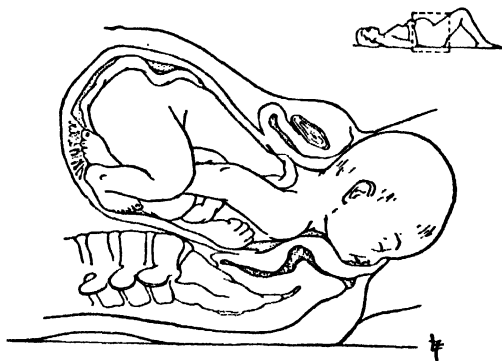
Illustration 17-3. THE BIRTH OF A BABY.



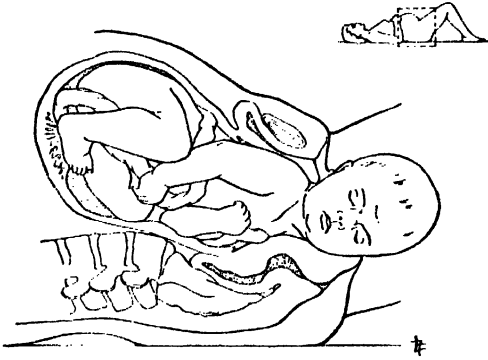
1. Full dilation. The baby has passed through the cervix into the vagina.



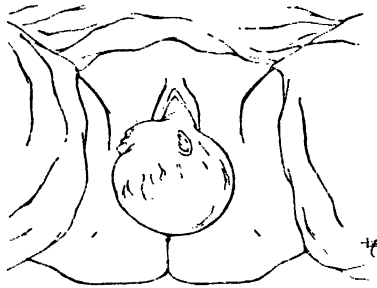
2. The top of the baby's head has become visible.



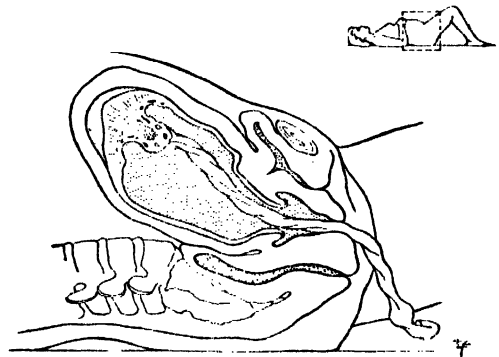
3. The baby's head has practically emerged.



4. The baby's head has turned, enabling the shoulders to emerge easily.



5. The head having turned, the shoulders and body emerge easily and rapidly.



6. The placenta (afterbirth) is tearing away from the wall of the uterus, and is about to be discharged.

tear, and it is sewn up as soon as the baby is born. The material used for the stitches is absorbed, and therefore they do not have to be removed. The mother is completely anesthetized for an episiotomy.

THE AFTERBIRTH

The third stage of childbirth consists in the expulsion of the afterbirth or *placenta*. This is painless, or practically so.

DURATION OF LABOR

The duration of these three stages of labor varies a great deal. A woman having her first child is apt to be in labor as long as fifteen or sixteen hours, but a labor of three hours is not uncommon. For subsequent labors, eight to ten hours appears to be the average. Fortunately, long labors are usually less painful in a way. The pains are apt to be at greater intervals or of shorter duration and intensity, especially at first. The dilation period is the longest; the expulsion period usually lasts about an hour and a half for the first child, and half an hour for subsequent children. The third period lasts about fifteen minutes.

COMPLICATIONS OF CHILDBIRTH

The deliveries I have discussed are considered normal. Complications of delivery consist of those in which the baby's position is not normal, or when instruments or an operation must be resorted to for some reason.

BREECH BABIES

Most babies are born headfirst, which is called the *head presentation*. It is the easiest way for a baby to be born. In about four out of a hundred births, however, the child may emerge feet first, in the *breech position*. This makes little, if any, difference to the mother, but is not as easy for the baby. One baby in a hundred will lie crosswise in the womb, in the *transverse position*. In this case, the doctor prefers to reach in and turn the baby to a more favorable position.

By means of x-ray and manual examination, the doctor will know the position of the baby before birth begins, and will be prepared for the type of delivery he faces.

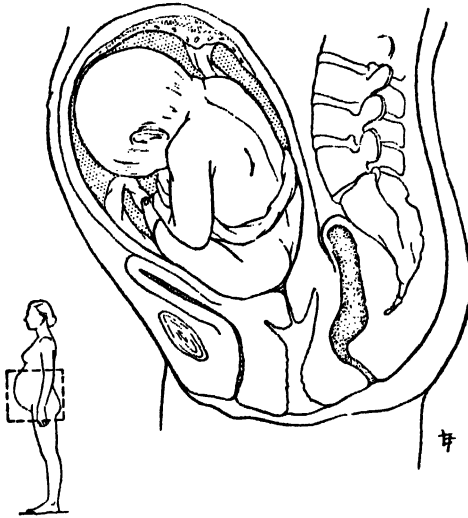


Illustration 17-4. BREECH BIRTH.

The birth process is about to begin, with the baby in the breech position.

FORCEPS (HIGH)

In some instances it is necessary, for the safety of the baby or the mother, to hasten delivery before the head has appeared at the opening of the birth canal. For example, the journey may be slow because the mother is in poor condition and cannot expel the baby properly, or the baby may appear to be in danger of dying if it is not born quickly. The doctor will then reach into the birth canal and draw the baby out with forceps.

This instrument consists of two blades which are inserted separately into the vagina and the birth canal. When the doctor feels the baby's head between them, he clamps the handles of the forceps together. He then clasps the head firmly, and carefully extracts the baby in a manner simulating normal labor. The use of high forceps in delivery was dangerous in the past, and there is still some risk to the child, far more, of course, than in the use of low forceps which simply help to lift the baby through the external opening. However, an experienced obstetrician almost never injures a baby in this way, and, because he will not use high forceps unless it is absolutely necessary, this instrument is a boon rather than a source of danger.

CAESAREAN DELIVERY

If, for some reason, the baby cannot be born through the vagina—because the mother is ill, or her pelvic structure is too small—the doctor can perform an operation to remove it through the abdomen. This is called a Caesarean delivery, Caesarean section, or Caesarean operation, because Julius Caesar was supposed to have been born in this way. Women now need have little fear of such an operation. Many doctors prefer to deliver subsequent babies in this way if a woman has had one baby by Caesarean section, but it is possible for her to have other babies normally in some cases. The chief danger lies in the fact that the wound from the first incision may open during a subsequent hard labor.

Although the Caesarean operation is quite safe, it is still a major surgical procedure, and few doctors perform it without a very good reason. I would certainly not recommend it simply because it is less painful than a normal delivery.

DIFFICULT LABOR AND PRECIPITATE LABOR

Labor can be unusually difficult or prolonged if, for example, the pelvis is narrow, due, perhaps, to rickets. The mother may be so weak that her contractions are not sufficient to expel the baby. The obstetrician will use instruments or will operate under such circumstances. There is no reason for a mother to worry about whether her labor is unduly slow. The doctor will know, and will take the necessary measures.

Precipitate labor, or spontaneous birth, is something many mothers ask about. Suppose the baby comes immediately, with little or no warning? This happens seldom, especially in the case of a first child, yet babies can, and have been, born with as little as one labor pain. To some women, this seems highly desirable, but it has definite disadvantages. The tissues may stretch so rapidly that a severe tear results; and, of course, the baby may be born before the doctor can get there. Because of the possibility of precipitate labor, we doctors urge the mother not to eat if she feels she is starting in labor, since this could cause vomiting while the patient is under an anesthetic.

Any one of us may have to be an obstetrician some day. Babies have been known to arrive in taxicabs, on streetcars, and completely unexpectedly at home. For what to do in such an emergency, see page 489 in Chapter 23 on First Aid.

AFTER THE DELIVERY

As soon as the baby has been expelled, he and the mother both receive the attention of the obstetrician, who calls on his assistants if both his patients happen to need help at the same time. The doctor holds the baby upside down and removes any mucus in the respiratory tract. The baby gasps and soon cries if its breathing mechanism is in working order. If the baby doesn't cry immediately, the doctor has many ways to help bring this about. The doctor then clamps the umbilical cord in two places, and cuts between the two clamps. The stump of the cord, about two inches long, is bandaged. The baby's eyes are routinely treated with silver nitrate solution to prevent any possibility of a gonorrheal infection. The baby is handed to a nurse who wraps him warmly, and places him in a crib, while the doctor again gives his attention to the mother. Incidentally, if the membranes should happen to remain intact during the delivery, the baby will be born "wearing a caul." This was once considered to be a sign that he would be very lucky or gifted, but actually it is of no importance.

Returning to the mother, the doctor will sew any tear, or the cut he made while performing the episiotomy, while he waits for the afterbirth. He can help her to expel this, if necessary. After it has been expelled, he examines it carefully to make certain none of it has remained in the uterus. Again, he can assist in this, if it is necessary. If the uterus fails to contract as it should, there is danger of hemorrhage. Medicines are usually given to help the uterus contract. It is held in position and massaged through the abdominal wall for about an hour by the doctor or nurse. If bleeding is severe, a transfusion may be required.

Again the baby receives the obstetrician's attention. He weighs, measures, examines, and places identification marks on the infant. During this examination, he will discover any defects or abnormalities. If these are minor, they can be easily corrected at this early stage. The partial or complete correction of many others is very much facilitated if they are attended to early.

About five births out of every hundred are premature. The degree of prematurity may be so slight that it makes very little difference. However, a baby born very prematurely requires great care if he is to survive. Fortunately, science has made it possible to reproduce very closely the conditions inside the mother's womb, providing a premature infant with the proper temperature, humidity, freedom from germs, and easily digested food. The larger the premature baby is, the better his chances. Doctors consider any baby weighing less than five and a half pounds premature. I realize that this is pretty arbitrary. To a mother who weighs less than a hundred pounds, a five and a half pound baby is

quite big! However, we do have to establish some figure, and it is safer for the average baby if we set it as high as five and a half pounds. So don't worry unduly if your child is regarded as premature. It just means he will get extra care!

As soon as the baby is ready, the nurse takes him to the nursery. The mother is wheeled back to her bed, when the doctor is certain she, too, is all right.

After the uterus has remained firm for about an hour, it no longer requires massage. By this time, the mother has usually been given a hypodermic so that she will get some sleep, unless she is still under the effects of the anesthetic she has received. If she has been lightly anesthetized, she will probably be hungry within a few hours after the delivery, and may eat a fairly substantial meal.

NORMAL CONVALESCENCE

Many women say there is nothing to compare with the sense of well-being they experience after having a baby. I can remember how they used to complain, twenty years ago, about being treated like invalids, scarcely allowed to stir for several weeks.

As I explain on page 580, we have discovered that surgical patients do better if they get up soon after an operation. Gradually, we have shortened the period of invalidism after childbirth as well. Experiences during the bombings of World War II indicated that there was little, if any, harm done to mothers who had to get up out of bed almost immediately after having a baby, in order to reach a bomb shelter. Of course, no one recommends such a drastic procedure, but many doctors like to see their patients out of bed for 5 per cent of the time during their first few days. They find that the bowels and bladder function better, there is less danger from infection, and the patient's strength returns more rapidly. This is a matter for the individual patient and her doctor to decide.

The mother may experience some "*after-pains*" during the first day, or for several days, after the baby is born. These are due to the contractions of the uterus, which is rapidly shrinking back to its original size. They are similar to menstrual cramps and, though usually not troublesome, can be controlled by aspirin or similar medicines.

There is a discharge from the vagina, called *lochia*, which is sometimes incorrectly referred to as menstruation. It is bright red for the first few days, then fades until it is a yellowish white on about the tenth day, occasionally bloodstreaked. If it continues beyond the fourth week, or recurs, the patient is probably doing too much, and should see her doctor.

Occasionally a woman will have a *chill* soon after delivery. This may be a nervous or emotional reaction. It is quite likely that her nervous system is more sensitive at this time. Many doctors think this is why their patients sometimes unexpectedly burst into tears, even when they are feeling very well physically.

The mother may wonder why her baby is brought to her to *nurse* about twelve hours after he is born, before she has any milk. There are two reasons for this: the thin fluid she secretes, called colostrum, contains substances extremely valuable to the child; and both mother and child need experience in the art of nursing.

I discuss breast and bottle feeding in the next chapter, page 365. Like most doctors, I am in favor of breast feeding. If it is at all possible, I hope you will nurse your baby, at least for a time. If your *nipples* become sore, your doctor can prescribe ointments or a nipple shield to help them.

Your intestines will be sluggish after childbirth, so your doctor will probably give you oil or a mild cathartic. He will then probably order an enema if your *bowels* fail to move. Your *bladder* may be sluggish, too, especially if you had a forceps or a breech delivery. If you cannot urinate, the doctor will catheterize you. This is a quite painless procedure.

It probably will make no difference to your figure whether or not your *abdomen* is bandaged. Some doctors recommend this; others do not.

Your *appetite* will probably be good, and you will be allowed a good hearty diet with plenty of milk.

Rest is important. Most doctors wish visitors would stay away unless they know enough not to overtire the patient.

COMPLICATIONS AFTER DELIVERY

Infection of the breast sometimes occurs on the third or fourth day after delivery, when the milk is coming in. It may develop much later. When lactation begins, the breasts are full and hard, engorged with milk. But they are not inflamed or especially tender. If *mastitis*, the medical term for an infection of the breast, is present, the breasts become tender, red, and warm. This is a bacterial infection, and in some cases an abscess may develop which must be incised and drained. Usually, however, it responds quickly to the sulfonamides or one of the antibiotic medicines such as penicillin.

Puerperal fever, or childbed fever, used to cause many deaths. Until less than a hundred years ago it could sweep through a hospital ward, killing almost all the mothers present.

The great Hungarian obstetrician, Dr. Ignaz Phillip Semmelweis, who

died in 1865, discovered that this disease was due to an infection which the doctor carried on his hands from the dissecting room or from a woman who had the disease. Dr. Oliver Wendell Holmes, the American author-physician, came to a similar conclusion at about the same time Dr. Semmelweis made his great, though not readily accepted, discovery.

Today we know that puerperal fever is a streptococcal infection of the lining of the uterus, which spreads throughout the body. Because babies are delivered under strictly aseptic (germ-free) conditions today, puerperal fever has been practically eliminated. If, by any chance, it does develop, it is promptly treated with sulfa drugs or antibiotics. It usually responds very quickly.

YOU LEAVE THE HOSPITAL

Since complications seldom develop after childbirth, most mothers leave the hospital within about a week, sometimes less, after their babies are born. Even though this is half or a third the time that mothers used to stay, you may become impatient and want to go home even earlier. You may even have a spell of restlessness, and beg your doctor to let you go.

Next to the feeling you experienced after your baby was born, there is nothing so wonderful as the way you feel when you, your husband, and your baby leave the hospital together. But no matter how much you long for that moment, be sure to take your doctor's advice. He knows how strong or how weak you are, and how much you are going to have to do when you get home.

Under almost any circumstances, you will probably have plenty to do when you get there. You want to do it well, so that you can give your baby a good start in life. I will tell you about that in the next chapter. In the meantime, take it easy, rest as much as you can, and be prepared for the next part of the great adventure of having a baby.

Giving Your Baby a Good Start in Life

YOU'RE HOME with your baby. The moment you longed for has at last arrived. And then, either gradually or in a sudden, shocking revelation, you discover it isn't the heaven you imagined it would be.

In the hospital you were waited on and cared for, the center of admiration in your pretty negligee. (You couldn't help secretly admiring yourself, with your miraculously flat abdomen and your face no longer heavy and lethargic.) Your only wish was that you'd be allowed to do more for yourself.

And now—now you are Cinderella after the clock struck twelve! Your back aches and your face, as you glimpse it in the mirror, is no longer blooming. There's so much to do you feel like the household slavey. Everything, from housework to family problems, has been piling up waiting only for your return to slide down and smother you under an avalanche.

As one new young mother said to me, "Don't tell *me* that the emotional upsets and depressions following childbirth are caused by glands and hormones and psychic factors! Any *man* in the pink of physical and emotional health would go right off his rocker if he had to cope with what I'm facing!"

It wasn't only that the entire household rested on her shoulders, she said, but the baby had turned into a source of constant apprehension. She was afraid to pick him up for fear he'd drop on his head; if he was quiet she was certain he had suffocated, and if he cried she knew a pin was sticking him—or worse, that he was starving because she didn't have enough milk, and she'd never learn how to make his formula. And then Aunt Ida came by and announced that he would have to have an operation because his navel was ruptured. And then. . . .

Now, in the course of this chapter I shall tell you how to care for your baby, but just in case you're worrying about any of the things this young mother mentioned, let me assure you immediately that:

There's absolutely no truth in the overwhelming majority of the stories you've heard about babies being dropped on their heads or suffocating. Of course you should be careful; but the last thing that I, as a doctor, am concerned about is the fact that you won't exercise enough ordinary common sense to avoid these *extremely* remote dangers.

There is nothing difficult about preparing a formula, despite its complicated-sounding name. It is simply milk and sugar and water, which any woman who can make a pot of tea or coffee can prepare without any trouble.

Practically every new baby has a protruding navel—which doctors call an umbilical hernia. After a while—perhaps days, perhaps months—the spot where he was attached to you will close and his navel will no longer bulge when he cries. (Your doctor may strap his abdomen, perhaps with adhesive bandage, to prevent the bulging.) But it is not at all important if it does bulge, so don't let Aunt Ida worry you. In fact, Aunt Ida should not have been allowed to visit you anyway! One of the things to settle long before you have your baby is that there will be no visitors until you have plenty of time and energy for them. How soon that will be depends on many things, but I would suggest, *no visitors for the first week at least.*

HELP FOR THE NEW MOTHER

Personally, I think you should have help for the first month or two, and a *great deal* of help for the first and, if possible, the second week. (Double everything I say about help if you have twins!)

Some parents fail to take the question of help into consideration when they are budgeting for the baby. It is a **MUST** item. If relatives or friends will treat you to a diaper service, or have your other children visit them, if your husband can use some of his vacation to assist at home, or if a grandmother can take over for a while, these things enter into the matter of help. But I would like you to have a practical nurse, or a trained nurse, for at least a week, preferably two. One thing you *must* insist on: anyone who is going to help you take care of the baby must be in good health. You can be sure of this only if she has had a recent medical checkup; at the very minimum, insist on a chest x-ray to make certain there is no tuberculosis of the lungs.

THE NEW MOTHER'S HEALTH

Ideally, the mother should behave as though she were convalescing from an illness for at least a week, preferably two, no matter how well

she feels—and she should feel very well. If your apartment or room is upstairs, you can walk up very slowly when you come home from the hospital, resting on a chair part way up if there is a landing. After that, no more stairs if possible during the “convalescent” period. Spend half of each day resting: that is, if you are up and about for an hour, lie down for the next hour. Go to sleep around nine o’clock, and let your husband or someone else help out with the baby so your sleep will be interrupted as little as possible. Try to have your breakfast in bed. Even if you have to prepare it yourself, you’ll probably find it more restful to put it on a tray and eat it in bed where you can rest and relax for a while afterward.

Gradually, after a week or so, increase your activities—stairs once a day, and so on. These activities should not all be work, but should include walking outdoors for a few minutes if the weather is pleasant. By the end of the month, you should be on a practically normal schedule, except that you still need an afternoon rest and plenty of sleep. Usually it will be two months before you are completely your old self again.

You may take a shower or sponge bath as soon as you want, and a tub bath in two to three weeks after the baby was born. Ask your doctor before you take a douche. You may wash your hair whenever you feel up to it.

If the *lochia* (see page 356) continues more than four weeks, or if bleeding continues after the second week since the baby’s birth, consult your doctor.

Wait at least six weeks before having sexual intercourse; at this time, the doctor will examine you to make certain your tissues have thoroughly healed. If intercourse is painful, take a hot bath first, and then use petroleum jelly or K-Y jelly to lubricate the vagina; if the pain persists, consult your doctor.

Menstruation usually returns within four to eight weeks in mothers who do not nurse their babies. The first menstrual period is almost always unusual in some way. It may be profuse, or there may be clots, or it may stop and start again. The second should be normal, or nearly normal. Menstrual periods are usually postponed if the mother nurses her baby—but *not always*. Don’t count on the fact that you will not get pregnant while you are nursing. (Menstruation probably will not interfere with nursing your baby.)

You may eat anything you like, and I hope you will want to eat good, sensible meals. If you are nursing your baby, drink at least a quart of milk every day, and go very easy on alcoholic beverages and cigarettes. Avoid getting overweight.

It may take a while for your muscles to recover their springiness and your figure to return to normal. Whether or not to wear a girdle is up to

you and your doctor. Some women feel better with one, and some without, and I have found that this usually depends on whether or not they liked wearing a girdle before they were pregnant. I think it is best not to wear one all the time, in order to let your muscles do some work themselves. Most women feel more comfortable if they wear a supporting brassiere (but not a constricting one).

The following exercises will help make you feel stronger and better. Start them about two weeks after the baby is born.

1. Lie flat on your back in bed and raise one foot slowly for a few inches, keeping your leg stiff; lower it slowly. Do the same with the other foot. Repeat about half a dozen times if you are not tired. The next day lift each leg a little higher, and so on until by the end of a week or so you will be able to raise them until they are at right angles to your body.

2. Paddle your legs, while you are lying on your back, as though you were riding a bicycle. Do this until you begin to tire. Work up to about twenty-five strokes.

3. Assume the knee-chest position for about five minutes every morning and evening. (See illustration.) Be sure to have your knees far apart, and to *put your weight on your chest* rather than your arms or elbows.

4. Ask your doctor *if* and *when* you should begin the full set of abdomen- and back-strengthening exercises illustrated on pages 11 and 12.

5. Ask your doctor about the need for *breast-firming exercises*, shown in the chapter on women's problems, page 778.

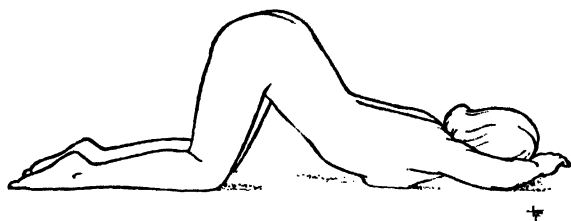


Illustration 18-1. THE KNEE-CHEST POSITION.

Assuming this position helps to restore the muscle tone of the uterus (womb).

THINGS TO HAVE ON HAND FOR THE BABY

Long before the baby arrived, you undoubtedly bought the layette. But if you have been waiting to see what people would give you, or if

you have not checked carefully before going to the hospital, someone should make certain you have at least the following items when you return home with the baby:

4 to 6 dozen diapers.

4 shirts (long or short sleeved, according to the weather and the temperature of your house).

5 or 6 nightgowns or wrappers.

2 sweaters.

Hooded wrap for outdoors (how warm a wrap depends on the weather).

Your baby will also need:

Bassinet, or a basket or box that can be used instead. It should be placed on a sturdy table or stand, not on the floor. *Baby should have a room of his own*, although you will want to put his bassinet in your room at night for the first few weeks.

Firm mattress for bassinet; if yours is a homemade box or basket, and you don't want to buy a mattress, a felt pad or smoothly folded blanket will do.

2 waterproof pads, 11 by 18 inches.

Waterproof case (pillowcase) for mattress—or make one out of rubber sheeting).

6 quilted pads for mattress, about 11½ by 18 (or make them from four yards of 18-inch material).

2 or 3 small pillowcases to use for sheets (muslin or cotton).

3 or more lightweight blankets, about a yard square (women's wool square scarves which are about a yard wide are cheaper and just as good). If the baby has an allergic family background, or his skin is unusually tender, he may react better to *cotton* flannel blankets.

Table to dress and "change" baby on; or build a wide shelf the *right* height (for the sake of your back!) against the wall.

Chest of drawers, or part of a bureau, for baby's clothes and supplies.

Mild soap for washing diapers.

Covered 2 gallon rustproof diaper pail.

Low chair and footstool to use while feeding, and a high stool to sit on while dressing baby.

Scales.

Mosquito netting to hang over bassinet if there are flies or mosquitoes.

Room thermometer (the temperature of the room should be around 68°-74° during the day, and as cool as 60° at night by the time the baby weighs 8 pounds).

Bathinette, or an enamel or rubber bathtub.

2-4 towels, 3 soft washcloths (old linen or soft cotton cloth, about 10 inches square, hemmed, will do for washcloths).

1 cotton bath blanket.

2 towels to use to cover bathinette or table after baby's bath.

Bath thermometer is handy if you are worried about getting the bath water too hot or cold.

Tray with supplies (tray can be homemade, from a flat baking pan, and the jars to keep things in can be food jars, cleaned and boiled, and marked with adhesive).

Supplies should include: sterilized cotton; rustproof safety pins, a dozen large and a dozen small; package of toothpicks; 6 oz. plain mineral oil; "baby talcum"; any plain, unmedicated, pure soap; and a soap dish.

Rectal thermometer for taking baby's temperature (see page 407).

Note: If you nurse your baby, you will need fewer bottles than if you know from the beginning that you will bottle-feed him. But you need some bottles and other supplies either way, for providing that "relief" bottle of milk or because you may have to stop nursing for some reason, also for water and orange juice.

Nursing bottles and nipples and covers for nipples (three 4 oz. bottles with nipples and covers is a minimum for a breastfed baby; for others, 9 of each; although 4 oz. bottles are handy when baby is little, 8 oz. ones can be used from the first).

Covered saucepan large enough to boil bottles and other equipment in, with rack.

Brushes to clean bottles and nipples; covered wide-necked jar for nipples; enamel quart-size container to heat formula in; measuring cup; funnel; orange squeezer; strainer and spoon which can be sterilized; long pair of forceps (or tongs) to lift out articles.

(You will need a baby carriage before long, and it is handy to have one from the first, unless your bassinet is easy to wheel, so you can move baby around easily.)

(Crib for baby when he is two to three months old. Be sure to get one with bars close enough so he won't get his head caught between them. And big enough to last till he goes into a regular bed. Be sure the paint is harmless, if its "home painted." Get a good, firm mattress that will last.)

DECISIONS TO MAKE IN ADVANCE

There are a number of things you can settle before the baby is born, so that you won't use up your emotional energy making decisions after you get home—when everybody gives you unsolicited advice. Of course you will have to be flexible because circumstances may change.

BREAST VERSUS BOTTLE-FEEDING

Like most doctors, I strongly favor breast-feeding. It has some tangible, and some intangible, advantages for both the baby and the mother.

Breast milk is easily digested by your baby, for whom nature especially made it. It contains practically everything he needs during the first months of life. Babies who are breast-fed seem to have a partial or temporary immunity to certain diseases. Also, the act of nursing helps to satisfy some of their emotional needs.

As far as the mother is concerned, nursing contracts the muscles of the uterus, encouraging its rapid return to normal. It makes her feel close to the baby, satisfying her emotional needs. It is less expensive, and it is not dependent on obtaining supplies. It won't ruin her figure; nursing mothers need not gain any weight even though they eat well and drink a quart of milk a day (for example, skimmed milk is far less fattening, and will do exactly as well). If the mother does not gain weight, and if she wears a good supporting brassiere, the appearance of her breasts won't be appreciably altered. Nursing does not interfere with her health. It can be compared with exercise—that is, tiring but not harmful to a healthy woman. If a nursing woman loses weight or becomes overtired, she is undoubtedly below par in some way, perhaps emotionally, and should consult her doctor. He is very apt to have her stop nursing and curtail her activities in other ways as well. But even women who are not robust often thrive on nursing.

It is true that there are disadvantages to breast-feeding as far as the mother is concerned. Her freedom is restricted; she can't go away for days at a time. It's difficult to nurse a baby *and* go out to work, although it is possible. If, for example, she returns to her job when the baby is about two months old and on a four-hour schedule, she may be able to manage things so that she need miss only one feeding which can be given in a bottle.

I am very much in favor of a supplementary or "relief" bottle for breast-fed babies anyway. Ask your doctor about this, since it can be a great boon to nursing mothers. He may suggest that you use your own milk at first, which you can express from the breasts by hand or by using a breast pump. (He will show you how to do this.) I think it is a good idea to use cow's milk in a formula quite early, so that the baby will get used to it. This is a great help if the mother does not have enough milk, or has to stop nursing, perhaps only for a few days, if she is not well.

The main disadvantage in nursing lies in the fact that some women really object to it. If you feel a real revulsion toward the act of nursing your baby (and *not* just an objection on the grounds that you think it will be a nuisance) don't force yourself to nurse. Or, try it and stop if it

disturbs you. Don't blame yourself; somebody else, not you, probably put the idea into your mind long ago, and it does not mean you are going to be an "unnatural mother." Nursing your baby is a little better than bottle-feeding him, but there is not enough difference for you to get upset. That would only spoil the very relationship which was one of my main reasons for urging you to nurse in the first place. Cuddle your baby and give him plenty of affection while you give him his bottle.

SCHEDULES

This is another matter you can and should decide about before your baby arrives. I hope you will choose to feed him when he wants to eat, and not follow a timetable. I am very much in favor of "demand feeding" as it is called—that is, a flexible, self-regulating schedule which the baby, rather than anyone else, works out.

A great deal has been said supporting each method. Those who favor the rigid schedule emphasize the fact that the average baby requires a sufficient amount of milk at four-hour intervals in order to satisfy his hunger and grow properly; and that this is a great convenience to the mother who will know just when to feed him. This is true, but it fails to take into sufficient consideration the fact that all babies are not the average baby. No two children have the same appetite. Some are hungry sooner than others, or eat less at each feeding and need them more often—or just because they happen to be like that. Some babies want to sleep longer at a stretch than others.

I think it is very important to satisfy a baby's hunger and thirst when they arise, and not to withhold satisfaction of this fundamental craving. It is not going to "spoil" the baby to feed him when he is hungry; on the contrary, it will make him less demanding if he is happy and satisfied. It is true that some mothers urge food—or practically force it—on babies every time they whimper; but most mothers soon learn whether the baby is crying because he is hungry or whether he would only like a little attention and stops the minute he is picked up. (Not that it will hurt him to be comforted if he is fretful.)

The thing to remember is that you are working *toward* a schedule when you follow the self-demand method. Both it and the rigid timetable system have the same objective, to give the baby enough to eat and establish a routine that helps the mother find time for everything she has to do. From my observations, they usually arrive at this end in about the same length of time! Mothers who follow a fixed schedule usually modify it sensibly, so that, in the long run, it comes fairly close to the self-demand system. For example, they feed the baby early if he is crying, rather than let him wear himself out and fall asleep exhausted.

Similarly, many mothers who follow the self-demand method will awaken the baby if he happens to be sleeping about four hours after his last feeding; they know from experience that he will be glad to eat even if he didn't "ask" for it, and that he is bound to awaken soon and want food just when his mother is busy doing something else.

So, whichever system you follow, remember that you are *working toward a goal*. Some babies do well on a four-hour schedule from the beginning, while others won't be able to wait that long, or won't be regular at all, for several months. It is wise to feed babies who weigh under seven pounds more often than once every four hours—every three hours at least.

Be very flexible about the 2 A.M. (or middle-of-the-night) feeding. Babies sleep through the night as soon as they are able to go that long without food, so don't deprive your baby of that feeding in the hope of speeding the time when you won't be disturbed at night. It helps to be flexible about the feeding that precedes the night one, too. That is, put it off till you go to bed if the baby is sleeping, so that he won't be apt to awaken quite as early for his next one.

YOUR BABY'S DOCTOR

Decide who is going to look after your baby's health before you leave the hospital. Will your family doctor take over, or are you going to have a "baby doctor" (a pediatrician)? Maybe you are lucky enough to live in a city that has a "Well-baby Clinic." Your baby has had a thorough examination at the hospital; for the first six months he should be seen by a doctor at least once a month. Decide who that doctor will be on the basis of the suggestions I make in Chapter 26 (page 527) and the advice of the doctor who took care of your pregnancy and childbirth. Having decided, *follow the doctor's advice*. The things I tell you in this chapter are not intended to, and cannot, take the place of your doctor!

CIRCUMCISION

It is wise to decide ahead of time about the question of circumcision if your baby turns out to be a boy. (Although I always refer to your baby as *he*, that is only for convenience because I want to be able to say *she* when speaking of you, the mother.) Circumcision consists in cutting off the "sleeve" of skin (*foreskin*) covering the penis, because this skin may encourage the collection of a cheeselike substance (*smegma*) that can cause irritation or infection. It is a simple procedure in little babies.

You may wish to have it done for religious reasons, or you may prefer to wait and see whether or not the doctor recommends it. If your doctor

thinks it should be done, by all means have it done early, as soon as he suggests; it will disturb you and the baby more later—in fact, little boys are often quite upset by having to be circumcised. Always have this minor operation performed by a *qualified person*, that is, someone of whom your doctor approves.

CARING FOR YOUR BABY

If your baby is *premature* or delicate, your doctor will give you special instructions. Fortunately, we know enough today so that such children usually do very well, but each one is a special case in himself. In general, premature babies need to be kept warmer, requiring a very warm room, with more moisture than the air is apt to contain; they should be handled less, protected from drafts, have special diets and, in general, receive more care and attention.

If you have a “preemie” who has reached the normal birth weight of about seven pounds and requires no special care, be sure to remember that he is “younger” than the babies I am talking about. That is, if he was born at seven months, get in the habit of mentally subtracting two months from his date-of-birth age. Don’t compare him with ordinary babies. It usually takes two years before he entirely “catches up” with his birth date and you can forget that he was premature. In the meantime, consider his progress by its *rate*, not by what he can do.

There have been endless debates as to which is more important in determining a child’s character and nature—heredity or environment. How much can be done to shape and influence him? Is the boy next door good or bad, athletic or artistic, stolid or nervous, because of inherent qualities or because of the way he was brought up?

The answer is, some of each. Babies are not alike in personality (or temperament, or inherent qualities, or whatever you want to call it) any more than they are alike in appearance. Some babies are big-boned, some are delicately built. Some are more sensitive to sound and to stimuli of various kinds. Some are lusty and some are subdued. Some eat and sleep a great deal while others may be poor eaters or sleepers regardless of the way they are handled. As they grow older, one child will have an excellent ear for music and another will have fine muscular co-ordination.

However, the environment—the way the baby is cared for and the surroundings in which he lives—will make a tremendous difference. Obviously, it will make a difference in his health and growth. It can also determine, for example, whether or not a high-strung baby becomes “nervous” or a stolid one becomes lethargic, even backward. It can de-

termine whether or not your baby makes the best of his complicated assortment of inherent characteristics. In any normal child, this means he can become a fine person.

Because each baby is himself, all babies cannot be treated exactly alike. However, all babies have the same basic emotional need for security and affection, and they all need a loving, relaxed atmosphere (as well as attention to their physical requirements) in order to develop their full potentialities.

Here are some of the things to do to help create such an atmosphere:

1. Love your baby. You may tell me with indignation that I needn't suggest such a thing—of course you love your baby! So perhaps I should say, *show* your baby that you love him, right from the beginning. Cuddling and soft words of affection will make him feel this new world is a pretty nice place to be in.

2. Enjoy your baby. Don't wait for him to do things you can boast of with pride, but enjoy him as he is, at each stage of his development.

3. Don't worry about spoiling him. He does not need to be disciplined when he is little; in fact he will do better without it. (I discuss discipline in the next chapter, see page 393.) Comfort him when he cries. You will soon learn to tell whether he just wants attention, and when he can get along without it if you can't spare the time. The baby who does not get enough attention is apt to demand more than the one who gets his share.

4. Don't attempt to train him, either. He will fall into good habits with the proper encouragement as far as eating, sleeping, and amusing himself are concerned. Don't try to toilet-train him during his first year. I discuss this subject in the next chapter, *Our Children's Emotions*, (page 395). Be sure to read this chapter because it contains information that will help you to give your baby a good start in life.

5. Don't worry about his being fragile. He isn't. He isn't fragile emotionally, either; that is, he won't be warped for life if you are human enough to be occasionally preoccupied or irritable or overattentive. It is his basic security that counts.

6. A baby needs a father as well as a mother. Although she is naturally the most important figure in his life, his father is also essential to him. The father should be a part of the baby's little world from the beginning, not a visitor who plays with the baby a few minutes a day and for whom the baby must be kept quiet. Too many fathers gradually assume the role of the dispenser of discipline and treats, rather than that of a parent. It may take tact and time to make the father a part of the baby's life, but it is well worth it so that their relationship will, from the beginning, be close and easy and happy. In this way the baby will have the two parents he needs, and to whom he is equally important.

7. Don't worry about his development. His doctor or the clinic will

check it every month. They will tell you whether he is big enough, strong enough, and "bright" enough for his age. Don't discuss these things with your neighbors. Simply take their comments in your stride when they volunteer them. Be sure to tell your doctor or the clinic everything you notice about your baby, especially if it seems at all out of the ordinary.

This does not mean you should not be alert between visits for signs or symptoms that may indicate everything is not going well. I tell you how to determine whether or not your baby is ill on page 406; and I discuss minor stomach upsets in this chapter on page 384.

If your baby is sick, don't give him any medicine or "treatment." Don't try to make him eat. If he isn't vomiting or having diarrhea, let him have his milk as usual. If he is, don't offer him any food, but try to get him to take a little boiled water frequently, unless he vomits it, in which case wait an hour or two before trying again. (See sections on vomiting, page 384, and diarrhea, page 385.) Keep him quiet and let him sleep as much as possible. Don't let him cry if something like rocking will soothe him. And, of course, send for the doctor immediately.

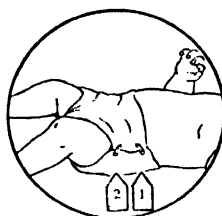
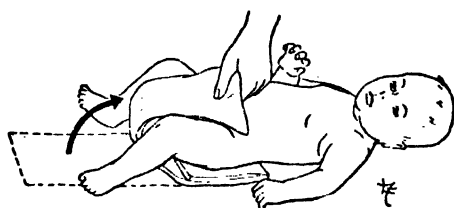
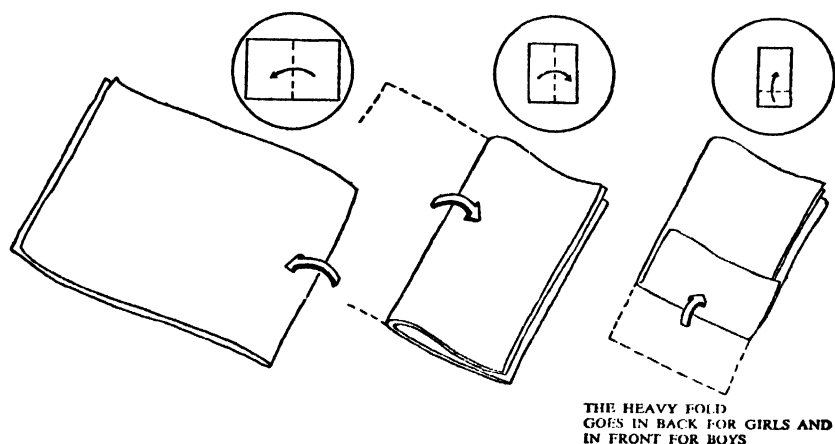
BABY'S DAILY CARE

A baby doesn't need to be dressed up; in fact, he will be more comfortable in his nightgown with a wrapper or sweater over it when he is out of bed. Don't bundle him up too much; his hands, for example, are usually cool. If he wears a cap, be sure it is a light knitted one so he can breathe through it if it slips down over his nose. *Don't use a pillow in his bassinet or basket.* Tuck the sheets and blankets securely under the mattress.

Let him sleep on his stomach most of the time. His head may be flattened on one side if he is accustomed to sleeping that way—but this won't be permanent. Incidentally, if his head is egg-shaped, that won't last, either. The soft spot on the top of his head (the fontanel) is tough, so you can touch it safely. If your baby is sleeping on his stomach, be especially careful about having the bedclothes firmly tucked in, and don't leave him in that position if he has cried a great deal or "spit up."

Most babies have a tendency to be cross-eyed (see page 134) when they are little. The color of his eyes will probably change as the baby gets older.

Change his diapers when they get soiled, and when they are wet if he fusses or if you are picking him up anyway. (See illustration for ways of folding and pinning diapers.) A disposable piece of clean linen or cotton placed on the diaper to catch the stool is a convenience. Shake soiled diapers into the toilet before placing them in the (covered) pail



1. PIN HERE FIRST (SHARP POINT
FACING TOWARD BACK)
2. SECOND PIN TO ADJUST DIAPER
AROUND THIGHS

Illustration 18-2. DIAPERING A SMALL BABY.

of water. Boil, or wash them in very hot water with a plain mild soap, rinse *thoroughly*, and dry outdoors if possible. If you detect an ammonia-like odor on the diapers, be sure to boil them, using a diaper bleach in the last rinsing water; this will help prevent diaper rash.

When you pick your baby up, support his body with one hand under his head and the other lower down. When you carry him, hold him on your shoulder with his head leaning over it a little so it won't bob backward. He will need support of this kind until he is about three months old.

Some fresh cool air is good for him. By the time he weighs eight pounds, he can go out when the temperature is over 60°, and by the time he weighs ten pounds he can be out for about two hours if it is above freezing and the wind is not too strong. Give him an "indoor airing" if you can't take him out. Some sun will do him good provided you keep it

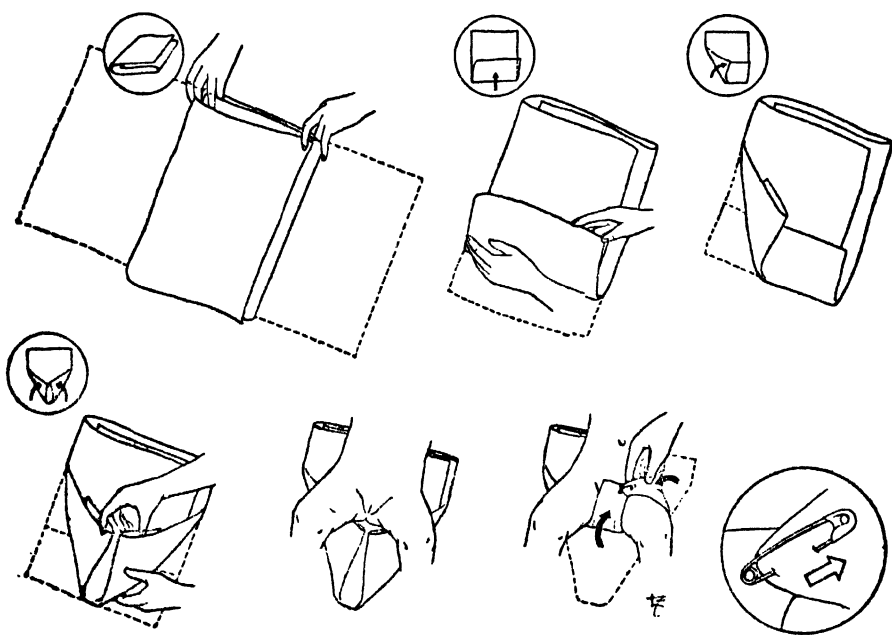


Illustration 18-3. THE "SHAPED" DIAPER.

This method of folding provides thickness without uncomfortable bulkiness between the legs, and is preferable for older, active babies.

out of his eyes and don't let him get overheated. Avoid sunburn by starting with two minutes' exposure and gradually increasing the time. Kicking and playing without any clothes on, even his diaper, on a bed in a warm (not hot) room is good fun and exercise for him.

Every baby is bound to be exposed to some germs. But don't expose him to "new" ones. The fewer people with whom he has contact, outside of his family circle, the better. He doesn't need visitors. There should be NO kissing from visitors, and NO visitors with colds or sore throats. Be very firm about this. Aunt Grace will get over her hurt feelings far faster than baby will get over the cold she may give him—and even if she doesn't, it is by far the lesser of two evils.

Be careful not to leave anything around that he may swallow. The main danger is that he may choke on it (see page 479). If he does swallow a small, smooth object like a button that goes down easily, tell your doctor; but this is not an emergency. Such things often pass easily through a baby. A needle or pin, however, can be quite dangerous, so get a doctor or take your baby to a hospital immediately.

BATHING THE BABY

Your doctor will tell you how soon your baby may have a real bath—probably when he is a week or two old, though some doctors prefer having the baby sponge-bathed for his first month or so. Around 9:30 A.M. is usually the most convenient time for the mother to bathe the baby, but any time that suits her is all right, provided it is before a feeding. Choose any room that is warm enough (75° to 80°) and not drafty. If you have no bathinette, put the tub on a table that is high enough for you, or sit on a stool. Be sure to wash your hands and have everything ready before you get started. Don't put too much water in the tub till you get used to bathing the baby; lining the tub with a clean diaper will prevent it from being so slippery. The temperature of the water should be about 90° to 100° on your bath thermometer, or feel comfortably warm when you dip your elbow into it.

Some mothers prefer to do most of the washing first, using the bath merely for rinsing purposes. Suit yourself about this. If you put your baby into the tub right away, be sure he isn't soiled; wipe him off with a little wet, soapy cotton first. You'll soon learn how to hold him so you will know he is secure in the tub: your left hand under his left arm, with your thumb over his shoulder and your fingers under it, so that your wrist supports his head.

Don't use soap on his face. Just wash it quickly with warm water and a soft cloth, and partially dry it immediately if you are going to wash his scalp. His eyes, ears, and nose and mouth don't need any special cleansing. If a little mucus stays in his nose, twist a bit of cotton (*don't* put it on a stick) moistened in water, and insert it in the nostril, holding onto it as you twist it so that the mucus sticks to it when you pull it out. You will want to wash his scalp once or twice a week. Apply some soap on your hands or wash cloth, lather, and rinse with the cloth, being sure his head is tilted back a little so the soap won't get in his eyes. If he has any "cradle cap" ("milk crust") on his head, wash the scalp daily until it clears up.

Soap his body with your hands or the cloth, paying attention to the folds and creases and the genital organs (your doctor or the hospital nurse will show you what to do if the penis needs any special cleaning). Let the baby splash a little, and then lift him out, wrap a towel around him, and dry gently and thoroughly, especially in the creases. Usually nature provides sufficient oil for the baby's skin, so why add artificial oils that occasionally produce irritation or infection? Also, I see little need for talcum powders.



Illustration 18-4. BATHING THE BABY.

UPPER LEFT: Testing the water's temperature. **UPPER RIGHT:** Hand completely covered to protect the baby. **LOWER:** Method of holding the baby firmly.

NURSING THE BABY

As a rule, nursing is a very simple and satisfactory way to feed a baby. You can help make it so by being relaxed about it. It is a good idea to rest a little first so you won't feel tense and hurried.

Your breasts require little care. Just before each feeding, wash your hands, and sponge the nipple (or nipples if you are going to use both breasts) with some sterile cotton moistened in warm water which has been sterilized by boiling. If you have a tendency to leak milk before you nurse the baby, you may find it convenient to place some pads of cotton inside your brassiere; be sure no wisps of it remain on your nipple.

You can lie on one side while you nurse, holding the baby close to

you in the curve of your arm. Or you can sit in a comfortable chair with a pillow at your back and one foot on a stool so that your knee will help support the baby; your curved arm will support his back. In either case, you will probably need to hold back your breast a little between the fingers of your free hand so that his nose won't be against it, interfering with his breathing.



Illustration 18-5. NURSING THE BABY.

As a rule, babies are nursed on one breast at a feeding, alternating with each feeding. In this way the breast is emptied completely, which prevents the milk from diminishing. (Your doctor may tell you to empty the breast by hand after your baby is finished, in order to encourage the supply of milk.) Some babies nurse rapidly and some slowly. They usually get most of the milk during the first few minutes, but should be allowed to continue. The average is about 10 to 15 minutes, with 20 considered the maximum time a baby should be left to nurse.

Once or twice during the nursing period, and when it is over, "burp" the baby by holding him over your shoulder so any air he has swallowed will be expelled. This makes room in his stomach for more milk. Besides, an air bubble may give him a colic pain if he doesn't get rid of it. He is apt to spit up a little, so have a *clean* diaper over your shoulder.

I have already discussed the *schedule* of feedings. Briefly summa-



Illustration 18-6. BURPING THE BABY.

Patting his back gently with the palm of your hand will help him expel air.

alized: as soon as the baby is ready they should be spaced at four-hour intervals; for example, at six and ten in the morning, and at two, six, and ten P.M., with a later feeding if the baby wants it, and the ten o'clock feeding postponed until eleven or later if it is convenient for the mother and baby.

Menstruation usually does not interfere with nursing. Don't take any *medicine* unless the doctor tells you to. Your baby may object to the way your milk tastes if, for example, you have been eating onions, in which case eliminate the offending item.

This is usually all there is to nursing a baby! The baby is *weighed* at least once a week. On an average he will gain:

7 ounces a week during the first three months.

4 ounces a week (less regularly) until he is six months old.

2 ounces a week (still less regularly) until he is nine months old.

Be sure to remember that *this is the average*—each baby has his own rate of growth.

If you have any nursing difficulties, consult your doctor. If your nip-

ples become sore or your breasts tender, it may be because of an inflammation or because of the way your baby is nursing. Your doctor will discover the cause of the condition and tell you what to do about it.

If the baby fails to gain weight properly, your doctor will find out whether he is getting enough milk, probably by having you weigh him before and after each feeding. He can then determine whether something should be done to increase your milk supply. Or perhaps he will recommend that you supplement the breast-feeding by giving your baby some formula in a bottle.

THE BOTTLE-FED BABY

A formula is milk that has been modified to make it resemble mother's milk as much as possible. Cow's milk is usually used, and water and sugar added to it; the mixture is boiled to kill any germs and to make it easier to digest. Pasteurized (homogenized or plain) cow's milk, or evaporated (not condensed) or dried, powdered milk are most often used—occasionally, "lactic acid milk" which is a little more difficult to prepare. The sugar is usually ordinary granulated or brown sugar, or cane syrup.

The proportion of sugar and water and milk, and the total amount, depend mainly on the weight and age of the baby, and are usually changed at intervals.

Your doctor will recommend the formula suitable for your baby, and tell you how to prepare it. However, just to give you an idea as to how simple it is, here is a formula which most doctors recommend:

For a very young (seven-pound) baby

14 ounces whole milk	}	or	{	7 ounces evaporated milk
7 ounces water				14 ounces water
2 tablespoons of sugar (granulated or brown, or corn syrup)				

This makes a total of 21 ounces, which are divided into five bottles, each containing a bit over four ounces.

For a ten-pound baby

20 ounces whole milk	}	or	{	10 ounces evaporated milk
10 ounces water				20 ounces water
3 tablespoons of sugar (granulated or brown, or corn syrup)				

This makes a total of 30 ounces, which are divided into four bottles containing seven and a half ounces each.

There are many ways of preparing the formula and washing and

sterilizing the bottles and other equipment. They all have the same purpose: to kill any germs that may be present and prevent others from getting in the milk or on the things used in preparing and giving it to the baby. This is very important because babies are susceptible to infections from the germs which grow rapidly in milk except when it is quite cold. Naturally you cannot sterilize everything your baby touches or keep him from putting his fingers in his mouth after he touches them. Fortunately, germs do not usually live long on the things he is apt to handle, so this is not a serious problem, especially if you keep anyone with a cold or other infection away from the baby and his belongings. However, precautions must be taken with milk and water.

Unless your doctor tells you to discontinue it sooner or later than this, I suggest that you continue to sterilize things until your baby drinks only from a cup. By then it is enough to be certain the cup is really clean, the milk pasteurized, and that the baby drinks it within a short time after it is poured, so that germs won't have a chance to drop into it from the air and multiply.

Your doctor or a nurse in the hospital will show you how to prepare the formula and sterilize the bottles and nipples. However, in case you suddenly find you must do this without guidance for your own or some other baby, the following method is, I believe, the simplest. The only problem it presents lies in the fact that "skin" or "scum" often forms while milk is heated, and this may clog the holes in the nipples. This skin will not form readily if you use homogenized milk, or if the milk can be cooled quickly, which is easy if the bottles are of the unbreakable (actually, heat-resistant) type that won't crack if they are heated or cooled rapidly. I'll mention additional ways of avoiding this difficulty as I describe this method.

For it, you will need the following:

Bottles, nipples, and bottle covers, or caps.

A sterilizing pail or basin, with a cover, large enough to hold a day's supply of bottles standing upright; the ones in which the baby is given orange juice and water need not stand upright since they will be empty.

A sterilizing rack in which to stand the bottles.

A measuring cup.

2 spoons (one for measuring, one for stirring).

A funnel through which to pour the milk into the bottles.

A Mason jar in which to keep the nipples.

It is also convenient to have a pair of tongs with which to pick up bottles when they are hot, a pair of forceps or tweezers to handle the nipples without contaminating them, and a brush with which to wash the bottles.

A saucepan, with a cover, in which to mix the formula and to use for boiling the nipples, etc. The two-quart size should be large enough.

If you have *good refrigeration*, you can save yourself some work by preparing the formula for two days at one time. If you do this, you will have to double some of your equipment.

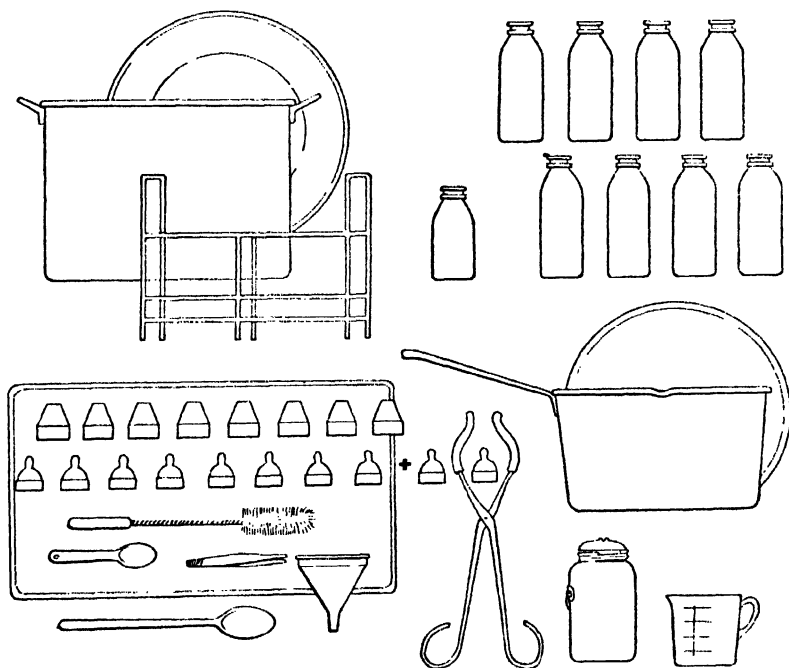


Illustration 18-7. EQUIPMENT FOR FORMULA.

(See list on page 378.)

Before starting, be sure everything you use is absolutely clean and free from soap. Regardless of the method you use, I think it is a good idea to rinse things promptly after they have been used; for example, rinse the bottle and nipple in cold water as soon as the baby is finished with a feeding. Once a day, wash everything carefully in soap and water and rinse with very hot water until you are certain there is no soap left. It is better not to dry these things; if you do, use a *freshly laundered*

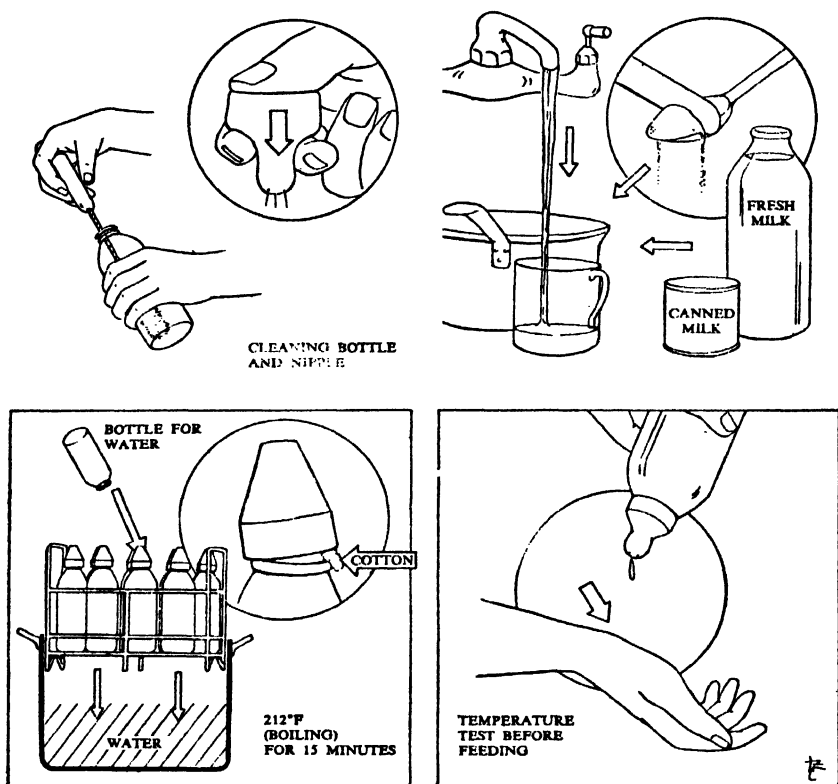


Illustration 18-8. PREPARING THE FORMULA.

(Described below.)

towel. Put everything away in a place where it won't be touched or contaminated with dust.

To prepare the formula: measure carefully the number of ounces of (cold) water called for, and put in the two-quart saucepan. Measure the exact amount of sugar, and add it to the water; stir till dissolved. (Sugar melts more rapidly in water than in milk, and it is also easier to see whether it has dissolved completely.) Measure and add the milk, and stir a few times. That is all there is to mixing the formula. Pour it through the funnel into the bottles, which are marked so that you can put the right amount in each bottle without measuring.

(If your formula calls for evaporated milk, prepare it the same way, but take precautions in regard to the can the milk comes in, because some of the milk will undoubtedly come in contact with the can as you

pour it out. Wash the can with soap and water and rinse in very hot water; sterilize the can opener or the instrument you use to punch holes in the can.)

Put the caps or bottle covers over the bottles, leaving them loose because the contents of the bottle expand with heat. If you use rubber caps that fit on snugly, put a bit of sterile cotton or gauze under one side to keep them loose. It is possible to put the nipples on at this time, but I do not recommend it as everything is going to be heated for fifteen minutes, which would cause the nipples to deteriorate rapidly, shortening their period of usefulness. Place the rack with the bottles standing upright in it in the sterilizing pail. If there is not room in the rack for the empty orange juice and water bottle, put them in the pail as best you can. Fill the pail with enough water to cover the bottles to the level of the milk, and boil for fifteen minutes, covered.

While this is boiling, wash the saucepan in which you mixed the formula, put in the nipples, the uncovered Mason jar and its cover, and the other utensils. Cover with water and boil for five minutes. Pour off the water carefully, fish out the tweezers and put them on the inside of the saucepan lid, or some other *clean* surface, to cool for a moment. Use them to lift out the nipples and place them in the Mason jar; cover the jar and put it away till you need the nipples. Put the other utensils away, too, handling them as little as possible.

When the water in the sterilizing pail has boiled for fifteen minutes, remove and cool the bottles as quickly as you can without cracking them. If you have unbreakable bottles, you can lift out the sterilizing rack with the tongs and place it in the sink which has cold water in it. Other bottles must be cooled more carefully, using tepid or warm water first. It will prevent skin from forming on the milk if you shake each bottle several times while it is cooling. If skin still forms, put a small piece of sterile gauze over the opening of the bottle before you put on the nipple; this will act as a strainer and prevent the nipples from clogging.

As soon as the formula is cool, put it in the refrigerator. If you have no refrigerator, or if you have any other reason to doubt that the milk has been kept cold enough to keep germs from growing, the best thing to do is to reheat each bottle before giving it to the baby. Put the bottle of formula in a saucepan containing enough water to cover the milk, and boil the water for ten minutes. Cool to body temperature before giving it to the baby.

In putting the nipple on a bottle, be sure your hands are *clean*; even so, don't touch the end of the nipple but only the part that goes over the neck of the bottle. Press the bottom of the bottle against your waist to brace it while you hold the neck of it with the nipple over it in your left hand, and pull on the nipple with the thumb and forefinger

of your right hand. It may take a little practice to be able to do this easily.

If you give your baby a formula, try to make the process of feeding him as much like nursing as possible. The schedules are the same. Bottle-fed babies should be "burped" in the same way as breast-fed babies.

In addition, the bottle must be warmed before the feeding, by placing



Illustration 18-9. GIVING THE BABY A BOTTLE.

it in a pan of hot water. Shake it to mix the cream, and to make certain the contents are uniformly heated. Always *test* the temperature by putting some drops on your wrist; they should be comfortably warm, not hot. Hold the bottle so that its neck is always filled with milk and the baby won't be sucking in air. If it takes the baby more than twenty minutes to empty the bottle, he is probably eating too slowly because the nipple holes are too small. They can be enlarged according to directions that come with the nipples. If he takes the milk too fast, it may be because the holes are too large, and a new nipple should be prepared; or perhaps he may need to rest a minute or two while taking the bottle.

ADDITIONAL REQUIREMENTS

Both breast- and bottle-fed babies need more than mother's milk or formula.

They may need *water*, depending, for example, on the amount of moisture that evaporates from their bodies. Be sure to *offer* your baby some boiled water in a sterilized bottle, but don't worry if he refuses it. This is one of the many things he knows best about. Offer it fairly frequently at first, and less often if he keeps refusing it. Don't give it before a feeding as it may reduce his appetite.

Babies need *vitamins* (which I discuss on page 34). In order to prevent rickets, your baby should have vitamin D from the time he is about two weeks old. (Haven't you noticed how few bowlegged babies there are since they began getting vitamin D?) Your doctor will tell you whether to give it in the form of cod-liver oil or one of the more expensive concentrated forms that are easier to give. He will probably suggest starting with about three drops of cod-liver oil following each of three feedings, and working up to a teaspoonful three times a day; or five to ten drops of concentrated fish oil a day; or the same amount of *Viosterol*. He may tell you that you can give smaller amounts of it in the summer, because the sun supplies vitamin D when its rays reach the baby's skin.

Bottle-fed babies should get vitamin C by the time they are a month old, and doctors often recommend it for breast-fed babies, too. Orange juice is rich in this vitamin, tomato juice less so. Usually a teaspoonful of strained orange juice is added to a teaspoonful of water, and given to the baby when he is hungry; the amount is increased to an ounce of each, and then the water is decreased until the baby gets two ounces of straight orange juice. Don't boil the orange juice because this destroys the vitamins. Prepare it shortly before you give it to the baby, since it has more vitamins when it is fresh. You do not need to sterilize everything you use in preparing the juice, although everything must be absolutely clean; to make certain of this, use the squeezer, strainer, etc., only for the baby's orange juice. You should also wash the orange in cold water, *without* soap, before cutting it, as it may have been contaminated. Use boiled water to dilute the juice, and a bottle and nipple which you have sterilized along with the others.

Other items of food are soon added to the baby's diet, e.g.:

At four months	cereal and egg yolk (starting with very little because some babies are allergic to it)
At five months	"baby vegetables" (strained vegetables or soup)
At six to seven months	scraped meat, fruit

After that, depending on whether or not the baby has any teeth, toast and other things to chew on are added. By the end of his first year, the

baby is probably eating cereal, egg, toast, vegetable, potato, macaroni, meat, fruit and junket or other desserts—in the form of three meals a day, with additional fruit juices, crackers, and milk between meals.

Your doctor will give you a schedule of items to add to your baby's diet. Right here I simply want to tell you that one reason we have started giving babies these things much earlier than we used to is to help them get accustomed to eating new foods. It won't matter if your baby refuses to eat them at first. In fact, the chances are that he will refuse, or throw around, or spit out, at least some new items. Don't get distressed. Regard these first feedings as "practice" for your baby and yourself.

DIGESTIVE DIFFICULTIES

Vomiting. Most babies vomit (or "spit up") from time to time, usually right after being fed. In some cases the amount is large enough to worry the mother a good deal, but it usually doesn't mean anything—not even if it happens daily—provided the baby is healthy and is gaining weight. As a rule, it is better to wait until the baby "asks" for food than it is to offer it to him right after he has vomited, for a surprisingly large amount usually stays down. If your baby doesn't seem well, if he vomits a large amount more often than once a day, and above all, *if he vomits with great force (projectile vomiting) be sure to consult your doctor.*

Colic. Many babies have attacks of colic until they are about three months old. It is not always easy to tell whether a little baby has colic, although most mothers soon learn to distinguish the cry due to colic pain from one that just means the baby wants attention. A baby with colic is apt to pull up his legs, and to expel gas. Putting him on his stomach and patting him may help.

Doctors do not know the exact cause of colic, but many of the things that contribute to it have been discovered. Your doctor will try to determine which of these is responsible in your baby's case, and to eliminate it. Frequently, the baby's diet needs alteration, and often he needs more relaxation and less stimulation, as babies with a tendency to colic are often easily stimulated. Fortunately, despite his suffering (and that of his parents!) most babies, with even the most severe colic, are very healthy.

Diarrhea. Young babies usually have between one and four bowel movements a day, and these are usually quite loose. This varies in different babies. However, if the *number* of a baby's bowel movements increases a good deal and if the stools become watery and perhaps green-

ish, you should consult your doctor. Mild diarrhea is not serious, but it should be checked before it gets worse. (See more on diarrhea in infants and children, page 426.)

If you cannot reach your doctor, try the following:

If your baby is breast-fed, omit orange juice and other items you have added to his diet. Omit anything unusual in your own diet. Try to cut down a little on the amount he is nursing, by giving him a little boiled water just before he is put at the breast.

If your baby is bottle-fed, try one or more of the following: Dilute the formula to half its strength by adding water. Boil it for about twenty minutes, being sure to replace the water that has boiled away. If the milk is quite rich, pour off a little of the cream before making the formula. Brown sugar is apt to have a somewhat laxative effect, so substitute granulated white sugar if you have been using brown sugar. Omit fruit juices and other foods.

Constipation. A breast-fed baby is almost never constipated; no matter how few movements he has, they are usually soft. If he should be, it can almost always be easily corrected by giving him a *little* strained prune juice; try a teaspoonful at first, increasing the amount the next day if it has not been effective.

A bottle-fed baby who is really constipated (that is, whose movements are hard and not merely infrequent) should also be given prune juice. In addition, substitute brown sugar for the sugar you have been using in his formula, and avoid boiling the milk. Use a method of preparing the formula such as the one on page 380.

Don't do anything else about constipation without consulting your doctor.

WEANING

Babies should be weaned gradually, so they won't feel that they are being deprived of anything essential. As this is easier said than done, it is important for the mother to be as calm and relaxed about the matter as she can.

Some babies are easy to wean, and will begin to drink from a cup quite happily from the time they are five to six months old. Others will want bottles until they are a year and a half old, or even older. Some babies want a bottle once a day, usually in the evening, drinking from a cup the rest of the time. Others will be weaned—and refuse to “stay weaned.” *Don't* let anyone convince you that your baby is backward, or stubborn, because he is hard to wean. Help and encourage him as much as possible, trying to get him to take the lead. Don't force the issue

or get upset by resistance and spilling. But don't be so afraid of forcing the issue that you actually encourage the baby to cling to his bottle. He will enjoy drinking from a cup, so keep at it in a calm, relaxed manner.

TEETHING

On page 71 I give a schedule of the dates when a baby's teeth usually come in. In the past, any illness from which a baby suffered during the entire period that his teeth were appearing was blamed on teething. Today we know that these diseases were due to other things. Nevertheless, teething can be painful, and some babies are quite upset by it, losing their appetite or suffering from digestive disturbances. Teething may cause a slight fever, but not over 101° . You can help your baby by giving him something hard and safe to chew on—a clean rubber ring, for example (not anything that will crack or splinter, like celluloid). You can also help by comforting him if he is miserable. Your doctor will tell you if anything more can or should be done.

Thumbsucking and masturbation in infants are nothing to be disturbed about, as I explain fully on pages 396 and 398.

YOUR BABY GROWS OLDER

The following list includes a very few of the things which the average baby does at certain ages. It is intended only to give you some idea of what you should look forward to, and for which you should be prepared.

Sixteen weeks: the baby smiles, coos and "plays." His eyes follow an object when it is moved in front of them.

Twenty-eight weeks: the baby sits up fairly well with some support. He shakes his rattle and touches it with his other hand. He rolls from his back to his stomach and moves around. He recognizes members of the family, and makes "talking" sounds.

Forty weeks: he sits well by himself, creeps, and often "walks" with help. He says a few "words" like "ma-ma, da-da, bye-bye."

ACCIDENT PREVENTION

As soon as your baby begins to pull things and to crawl, accidents are apt to happen. I discuss them and their prevention in Chapter 22, and also on page 393. Right here I want to emphasize the fact that it is up to *you*, and not to the baby, to prevent them from happening while he is small. Be sure to "baby-proof" your house. The father should

get down on the floor and look things over from the baby's angle. It is a wonderful experience in gadgeteering, I have found, to try to outwit your baby. You will soon discover where a gate should be placed to keep him out of a dangerous spot, or where a drawer containing a medicine or something else he must not put in his mouth, can be shifted to a safe, high place, or a place where the paint is not safe for him to chew on, or an electric outlet must be covered so he can't play with it. Of course, keeping an eye on him is the main line of defense!

INOCULATIONS

On page 175 I give the schedule for inoculations that will prevent your baby from catching diseases that might be dangerous to him. Be sure to follow it.

Good nutrition, inoculation, the "wonder drugs" and other medicines, accident prevention—and the healthy emotional attitudes which I discuss more fully in the next chapter—make it possible today for babies to get a wonderful start in life.

Our Children's Emotions

THIS CHAPTER is not concerned solely with children. Naturally I want all children to be happy, for their own sakes. But I also want them to be happy because such children bring joy to the entire household, contributing to the happiness of all its members.

For the infant and the child himself, there is a close relationship between good health and contentment. The healthy child sleeps and eats well. That means he gets a good selection of protein, minerals, vitamins, and all the essentials to growth and development that are contained in a balanced diet. Eating and sleeping well are two "health assets" for his entire life.

The happy, well-adjusted child sticks to safety rules because he finds it easy to identify himself with his parents and other grownups. He has fewer accidents than do children whose emotional difficulties drive them to disobey rules or become daredevils.

The emotionally satisfied child is relatively free of temper tantrums, bedwetting, stammering, tics, and other troublesome manifestations of emotional difficulties in childhood. These problems worry and upset parents, all too often resulting in a disturbed household. The resulting loss of sleep and of relaxation can decrease the father's efficiency at work, or cause friction between him and the mother—or, in many other ways, create situations that interfere with the health and happiness of a family.

"Do our children have to become problem children in this high-tension, reckless world we live in?" *My answer is an emphatic "No."* It is true that life has become more complicated in many ways. However, it is also true that we have made great progress in learning how to bring up children.

A hundred years ago, children were regarded as inherently willful, even wicked, creatures who must be forced—by punishment, fear, and shame—into submission (and into all sorts of emotional problems at the same time). There seemed to be no alternative to this method except that of allowing children to become little tyrants, to whose whims everyone must bow.

Today we realize that children can be *guided*. This process must be a

continuing one from the time the baby is born until he is ready to go out into the world. There have been tendencies, at times, to feel that some periods don't count very much in a child's emotional health, and that all one needed to do was to concentrate on the years 2 to 6, and later from 10 to 15—or on certain other periods. Such theories have been disproved. *Children, like other human beings, need love all the time.* They also need understanding during all the stages of their growth and development.

THE "AVERAGE CHILD"

Whenever I speak about the growth and development of children, parents (especially those with a first child) ask me, "What is the average child like at this, or that, age? What can he do? How does he behave? How big is he, and how much does he eat and sleep?"

At *two* years of age, the average child weighs 28 pounds and is 34 to 35 inches tall. He has about 16 teeth. He sleeps about 14 to 16 hours of the 24. He has been able to walk ("holding on") since he was a year old, and by himself since he was eighteen months old; now he can run, after a fashion, as well as walk. The dozen words he could say when he was eighteen months old have increased to 200. He uses them in phrases or short sentences. He has a fair degree of bowel and bladder control in the daytime (girls do better at night than do boys).

At *three*, the child has passed through a certain amount of turmoil manifesting itself in temper tantrums, "negativity," and so on, and is in a relatively stable period. He has all his "baby" teeth (20), speaks in (short) sentences, practically dresses and toilets himself and even "helps" around the house. His daily diet might consist of: $\frac{1}{3}$ cup juice, $\frac{1}{2}$ cup stewed or fresh fruit, $\frac{1}{2}$ cup cereal, about $\frac{1}{2}$ cup meat, 1 baked potato, $\frac{1}{2}$ cup vegetable (cooked and raw), 1 egg, 2-3 pieces of toast, 3 teaspoonsful butter or margarine, 2 small cookies or some other dessert such as junket.

At *five*, having passed through some additional "difficult" stages, he is in a relatively stable period. He is quite competent and independent, having reached the end of his "early childhood" and is getting ready to go out into the world of kindergarten or school. He sleeps from 11 to 12 hours a night, with a short rest or "quiet period" after lunch and occasionally a nap.

YOUR CHILD

I want to make it very clear that the child I described above is "the average child." Averages are arrived at mathematically—but your child

is an individual. It would be quite remarkable if he happened to be average in every detail. He's far more apt to be "above" the average in some respects, "below" it in others, and to alternate at various periods.

This may seem obvious as far as size is concerned. Everyone realizes that there are prize fighters who are perfect physical specimens in the featherweight class as well as among heavyweights! But even when it comes to size, some parents fret because they think Sonny is too small, or Sister too big—without taking into consideration the fact that they themselves may be above or below the average in height or weight. If they themselves are of average size, they usually forget that their children have grandparents and great-grandparents, too!

It might be convenient if children followed a timetable of physical—and intellectual and emotional—development, and all parents had to do was check off the items. "Children aren't like that, and I wouldn't want them to be!" you may tell me indignantly. But do you *really* feel that way? Are you secretly a little disturbed because your child isn't "keeping up with the Jones's"? Your child will sense it if you are worrying about him.

GROWTH

As far as *growth* is concerned, I think it is a good idea to record the weight and height and arrival of teeth so that your doctor will know whether the *rate* is within normal limits. Leave that up to him and don't worry about it yourself. Don't let your friends and relatives stress it unduly. Your child must not be made to feel uncomfortable about his or her physical development.

SLEEP

Provide your child with the opportunity to obtain the average amount of sleep. Of course it won't hurt to keep him or her up once in a while on special occasions, but don't make a habit of depriving children of sleep to suit your own convenience. When I speak of giving your child the opportunity, I mean, first of all, to provide a reasonably comfortable place where he will be relatively free from being disturbed. I say *reasonably* and *relatively* because most children aren't too fussy. Your home need not be as quiet as a church; but on the other hand, few children can sleep properly if the light is on, and if people are constantly coming in and out of their rooms or making a lot of noise. Second, and even more important, you should provide a proper *attitude* as far as sleep is concerned. How many homes do you know in which the question of getting Junior to bed is a major issue? Often getting him to bed

becomes a battle, with Junior apparently determined to stay up all night, and the parents grimly or desperately struggling to win the contest.

If your child has had a good start in life, as I describe it in Chapter 18, sleep should not be a major problem, although some difficulties will undoubtedly arise at some time. If there is any trouble, don't decide your child is being bad; try to find and eliminate the cause of the difficulty. For example, your child may at some time be afraid of the dark—usually because someone, not necessarily you, has frightened him. A dim light, or the door left open just a little, “until you're old enough so you won't want it any more,” will often help dispel the fear. A soft cuddly doll or teddy bear may be comforting company. Children usually go to sleep more readily if the evening meal is a simple one and they are not too stimulated at bed time. A tapering-off period of quiet relaxation, perhaps a soothing bed-time story, is helpful. Many children like the same ritual or pattern each night. Don't put a child to bed as a punishment. Be fair and considerate; make going to bed as pleasant as possible, but also be firm about it. Some children are better “sleepers” than others; and most children sleep better at some stages than they do at others.

EATING

Similarly, eating habits often become an issue in the household. Self-regulation, which I describe on page 366, usually gets a baby off to a good start, but at some time or other most children fail to eat as well as their mothers would wish. If the mother becomes tense—sometimes even desperate—and implores the child to eat, he may be balky in order to demonstrate his power. If she punishes him, it may make him hate the mealtimes which he associates with his unhappiness. Remember, too, that your maternal urge is closely connected with the desire to feed your child. That is a good, natural—and almost overpowering—drive. But you must learn not to overdo it because then your good instinct will work harm to your child. I advise mothers to place the food before their children and remove it if they don't eat it, with the result that they are ready for it by the next meal. *But this simple method doesn't always work.* It may be necessary to use ingenuity and imagination to make certain a child is getting enough to eat.

If a child is a “poor feeder,” either regularly or at certain stages of his development, the mother should calmly go about discovering the circumstances under which he eats best. Often being alone where he won't be distracted helps. Sometimes he does well with very small portions, or food that is easily chewed, or food that is easy to manipulate, or some food he likes—other foods should be gradually and tactfully

added. Sometimes he prefers to be fed, even though he's old enough (by that timetable of "averages"!) to feed himself. Sometimes, especially if he is restless or overtired, it helps to read a simple story while he is eating.

In regard to eating, as well as sleeping, remember:

1. Feeding problems are often problems that involve something other than, or in addition to, eating. It is best to discover what they are and solve them, but if you can't, a general atmosphere of love and relaxation will help.

2. Your child is not "the average child." He may eat less—or more—because that is what he needs.

3. Your child grows and changes. At one time he may eat (or sleep) well, at another time, he won't. Most children eat less in hot weather, in teething periods, and during the second year of life. During the second year there may be great variability in eating habits: some children go on "jags" and eat only meat for a week, and perhaps all potatoes the next week. Usually, their diets stay in balance if the period of the "jags" doesn't last too long.

Be sure to keep the above points in mind when you compare other phases of your child's development with those of the "average child," or of a neighbor. Some children develop rapidly in one way, slowly in another; they may walk at the age of 12 months but say "ma-ma" quite late. They may pass through stages of slow and rapid growth. They may even develop slowly in all respects, yet "get there just the same." If you are at all concerned about your child's development, talk it over with your doctor, *not* a friend or neighbor. The doctor *knows*, the neighbor only thinks she knows.

EMOTIONAL DEVELOPMENT

Some children appear to be young for their age, even babyish, at certain stages, and then for a while they seem to be exceptionally mature. This is particularly true of actions and attitudes which we as adults think of as "nice." Don't worry because Johnny is "selfish" about his toys at the age of two, or, having been generous, suddenly becomes "selfish" later on. Children have so much to learn! They have to learn, for example, what is *theirs* (in fact, what they themselves are) before they can know what belongs to another.

A child's development does not proceed steadily along a smooth highway on which his physical, emotional, and intellectual growth march along hand in hand. Quite the contrary; children are bound at times to get "ahead of themselves" in one way or another. For example, at about two and one-half they suddenly seem to become balky, contrary, tense,

fearful—in short, they behave in a way that drives mother to the verge of despair. Then, perhaps quite as suddenly, they become “good” at three years old.

Of course life is pleasanter for parents when the child is in a “good” period, but try to remember that it is pleasanter for the child, too! Periods of equilibrium are easier all around than periods of uneven development—but both are part of growth. Be sure to remember that Sally (or Sammy) is the same child at two and one-half as at three—and equally deserving of your love.

A friend of my mother's once embroidered a sampler for a daughter-in-law who was expecting her first baby. It had a border of small children in various stages of “naughtiness,” and, in the middle, the words, “This, too, will pass.” Having brought up six fine sons and two fine daughters, it was the piece of advice she felt a young mother needed the most.

I do not want to give the impression that parents need never be concerned about their children's behavior. But I do want to emphasize the fact that difficulties are a part of growth, and that they should be regarded as a challenge to you to find ways of helping and supporting your child as he weathers the squalls. Don't be a “fair-weather” parent who loves children only when things are going well!

DISCIPLINE

“Are you saying that children should be allowed to do everything and anything they want?” you may ask. “Doesn't there have to be some discipline?”

Letting a child do anything and everything is not the best way to help him. He must be launched on and encouraged along the path of becoming “civilized.” Call it discipline if you wish—although I prefer to call it *guidance*.

A great deal of guiding can be done indirectly. As you know, children are inclined to imitate. For example, if we say “thank you” to each other and to them, they will be far more likely to say it than if we make an issue of it. The child who pops out of bed a dozen times a night may be doing so because he is afraid of being deserted, or is going through a period of feeling dependent. He will respond far better if we can, indirectly, fulfill his needs than if we scold and punish him.

SOME DO'S AND DON'TS OF DISCIPLINE

1. During the child's first year he is absolutely dependent for everything. I consider it unwise to put any responsibility on him for either his

cleanliness or his safety. Babies and toddlers aren't willful; they're just eager to explore the world. We must help and encourage them in their courageous explorations and not frustrate them whenever they go for an appealing object. As I explain on page 386, it is up to us to protect them from danger.

2. Starting in the child's second year, he should be taught that certain things must be avoided. He must be met with a firm "No" when he plays near the stove, or climbs on a table or starts for a sharp knife. However, we must prohibit him as little as possible. In my house we did our best to move everything breakable and dangerous out of reach while our children were little. We wedged in the books, temporarily removed sharp-edged furniture, and put our one expensive lamp in the closet until company arrived! By the time the child is three, he is ready to accept a certain, definite amount of discipline as far as his own safety and that of other people—and of some objects—is concerned. He must not be permitted to run into the street, turn on the gas, pull the cloth from the table, and so on.

3. To discover whether you are demanding too much, count the number of times a day you and the other older people in the household say "No," or exert pressure in another manner. If there's a continual chorus of "No's," "Don'ts" and so on, you can be reasonably sure the discipline is too strict. Try to find ways to assume more responsibility yourself, or to make it easier for your child to assume responsibility.

4. Your child doesn't "need" to be punished. When a good relationship exists between parents and children, most difficulties can be resolved without resorting to punishments. Watch how a good nursery-school teacher or camp counselor handles a number of children! The trouble is, however, that parents have other things to attend to beside their children, and a punishment is often a short cut in their eyes. I realize that you haven't all the time in the world, and so I won't say you should never punish a child. If, for example, your firm "No" doesn't prevent him from reaching for a forbidden, dangerous object, a slap on the hand will probably stop him. In my opinion, it will in most cases cause him little more than momentary discomfort. Children have a good sense of fair play. They know when punishment has been deserved and accept it in good spirit.

Of course you won't always do what you know you should. You will sometimes act without considering the situation carefully—perhaps because you are tired or annoyed. Don't worry about that too much. Children are resilient. Tell your child honestly that you acted unfairly because you didn't understand, and perhaps make up for it with a little treat. The child will forgive and forget the punishment.

However, punishments are usually two-edged swords, frequently caus-

ing more harm than good. It is almost impossible to find the "ideal" punishment that will accomplish what you want without causing any harm. Nagging, threatening, or shaming a child can have a very bad effect on him. Never make your child feel guilt, fear, or shame. *Most important of all, never make him feel that he has lost your love.* And, of course, never punish him for things that are not his fault—for acting like a child instead of an adult.

LET CHILDREN EXPRESS THEIR EMOTIONS

Children express their emotions frankly, or, one might say, in undiluted fashion! They say "I love you," "I hate you," or "I'll kill him dead," when we would say, "That's nice of you," "I wish you wouldn't," or "I'd like him to go away."

Don't be shocked by this. If Johnny says "I hate you," take it in your stride, perhaps making some noncommittal remark to the effect that everyone feels like that sometimes. As soon as the child's frustration or hostility is over he will be in a loving mood again. On the other hand, if you are horrified, the child will feel guilty and repress his reactions. Remember, it is quite natural to have some feelings of hostility, even hatred. Accepting this as part of life makes it easier for children and adults to feel, and express, their affection and love more fully.

While children should be allowed (even encouraged) to act out and talk out their natural hostilities, they should not be allowed to hurt people physically. Children seldom know how far they should let their emotions go. We parents must show them. I think children want us to. When they go too far, they seem to welcome being restrained, perhaps by a firm word, perhaps by being removed physically from the situation.

TOILET TRAINING

Toilet training is far more important than most people realize. It is possible that correct toilet training can actually help toward establishing a good, self-reliant personality. Does that seem farfetched? Expert doctors, from the great psychiatrist, Dr. Sigmund Freud, to the United States Navy doctors who observed the exceptionally good mental health of the natives of Okinawa, believe there is a connection between the physical and mental health of adults and the way that they were toilet trained.

Many parents attempt to train their children too early and too strictly—and frequently with feelings of shame and revulsion on their own part. As a result, the children may be conditioned toward being timid, unsure, worried about dirt, or ashamed of parts of their bodies. The child of a

mother who takes toilet training too seriously usually discovers that he can upset or delight her by failure or success. Thus, what should be a simple physiological function to him may become a source of power or shame.

On the other hand, children who get their toilet training when they are ready for it—who are not pushed too hard, or not punished and shamed when they fail—have a better chance to realize the full potentialities of their personalities. How your child is toilet trained will not determine the kind of adult he becomes, but it may play an important part.

The most important thing to remember is that a child will, if left to himself, stop wetting and soiling when he is ready to do so. I want to urge parents to let nature take its course, with just a little guidance and encouragement. For example, the parent can make occasional suggestions about the use of the potty when the child is really ready to understand what is meant, or remind a child that it is a good idea to go to the bathroom before he becomes so engrossed in something that he won't want to take the trouble.

I disapprove of toilet training in the first year for all children, and during the second year for most children. If parents insist on attempting it early they should be prepared for many failures, especially if the child becomes ill or has an emotional upset. At such times, the parents should be completely nonchalant and willing to start over again.

We doctors often encounter parents who are so upset about the sight and smell of soiled diapers that we feel it is better if they try to train the child fairly early. But we are usually regretful, knowing that the child is being required to take on a burden the parents should be willing to carry. Talk the matter over with your doctor or pediatrician. If he sees that you appreciate the value of an easygoing attitude he will undoubtedly encourage it. Parents who are eager to have their children toilet trained early and perfectly, and who get tense or angry or scornful with a child who "misses," should talk to a sympathetic physician in order to discover why they take it so seriously. I predict it will do them and their children a great deal of good if they can air their own feelings. I usually find that such parents have had too strict a training themselves and, without realizing it, want to make their own youngsters submit to the same discipline.

THUMBSUCKING

Thumbsucking is a perfectly harmless way in which children obtain satisfaction or reassurance. Almost all children suck their thumbs at times—when they are going to sleep, or when they are frightened or lonely.

Babies also suck their thumbs (or fingers) when they are hungry, and when they are teething. The best way to treat thumbsucking is to forget about it! If it is excessive—if your child sucks his thumb most of the time—*don't* start worrying about his face being distorted or his teeth and gums being injured. These things almost never happen if thumbsucking stops before the second teeth begin to appear (see page 72). But *do* think about the reasons why he requires this kind of satisfaction. A good talk with your doctor will help you discover them. Usually thumbsucking stems from the fact that the child is, in some way, being deprived of all the affection he craves—or that he needs the solace of his thumb in a situation that makes him feel tense and insecure.

Children usually stop sucking their thumbs by the time they are four, five, or six years old. Sometimes this habit (like many others) persists after the need for it has passed. In such cases the parents can usually find tactful ways to help the child give it up. For example, if it is associated with twisting a blanket, they can suggest that the child cuddle a soft doll instead. But don't make an issue of it!

INTEREST IN SEX

Sooner or later the child will be interested in the sex organs, where babies come from, in pregnancy, and even in sexual intercourse. If his relationship with his parents is a good one, he will ask questions just as freely as he asks why the grass is green. These questions may not be easy to answer, but do your best to answer them truthfully. Telling the truth is simpler in the long run. Most children don't mind having been "deceived" about Santa Claus, mainly because it was fun and because the subject was not a source of tension in their parents. Deceptions about the stork, however, are apt to create problems. It is hard for most parents to explain to a child why they told the stork story. It is much easier to answer truthfully the simple questions small children ask than it is to tackle the complicated ones they think of later on. It gets you and the child off to a good start.

Tell the truth, but not necessarily with all the details. That is usually more than the child wants or can understand. Tell it simply, without any complicated analogies about the birds and the bees.

The first thing most children want to know—often when they are as young as two years old—is where babies come from. The answer can be that they grow inside their mothers. Next, perhaps immediately but sometimes not for a while, a child is apt to ask how the baby got there. "It grew from a little seed that was there all the time," is an adequate answer. "How did the baby get out?" can be answered by, "Through a special opening that mothers have." If the child wants to know whether

daddies have anything to do with it (and even if they don't ask this, it is wise to volunteer the information by the time they are three or four), say that the father's seed is needed, too.

It may be necessary to repeat all or part of this information frequently. That does not mean you should supply more facts than the child demands. Small children rarely expect any explicit information about the sexual act or the actual mechanism of birth. When they are older and do want to know, explain these matters simply and naturally in your own words. If you feel you can't do this, tell the child you will read about it to him. There are many excellent books, which your librarian will help you to locate, telling about birth in animals and humans.

Similarly, give your child truthful answers about sex organs. Sometimes it is necessary to volunteer a little information, as children are not always able to make their curiosity or concern known to their parents. The fact that a boy has a penis and a girl does not is often a source of worry to both of them. The girl may feel deprived, and the boy may fear that something can happen to him so that he, too, will be like the girl. It often pays to take the lead and avert such problems by explaining that girls and boys are made differently because they are going to be different when they grow up—a girl is going to be a mother and a boy a father.

Although parents should avoid false modesty, most experts in child psychology advise them not to expose their naked bodies to children, even very young ones. Adults and children should not take baths together. It may disturb children to be reminded so vividly of the physical differences between themselves and their parents.

It is also important to take precautions against having children witness or hear the sexual act. Children are apt to mistake passion for violence and to become frightened by seeing or listening to ardent lovemaking.

Be sure to remember that sex is *more* than reproduction. Nothing you can tell your child about the "facts of life" can be as important to him as seeing and knowing for himself what a good relationship between a man and a woman means in terms of respect, teamwork, loyalty, and tenderness.

MASTURBATION

Although I speak about masturbation in various chapters of this book (see chapters on *You and Your Mind*, page 229, and chapter on *Adolescence*, page 447), I am going to discuss it here because many parents, by being upset about masturbation in small children, sow the seeds of later emotional disturbances.

Take it for granted that your child is going to masturbate. Babies play

with their genitals just as they play with their toes. Unless their attention is concentrated on this area—because of an inflammation or irritation, or because of the attitude of their parents—no “bad habits” result. At various stages of their development, both boys and girls play with their own genitals, and those of other children, as a natural manifestation of curiosity. Of course, it is also a source of pleasure, but that is no reason to worry about it. Think of it as I advised you to think of thumbsucking. When indulged in excessively, masturbation, too, indicates that the child has an emotional problem. It is a *sign*, not a *cause* of “nervousness.”

I realize that it is not easy to be casual and relaxed when relatives and neighbors are horrified or upset. Just be as tactful and ingenious as you can, remembering that *your* attitude is the most important to your child.

STAMMERING, NAIL BITING, TICS, AND OTHER HABITS

As I have indicated, children have periods of increased tensions in their development. These vary with the age, the home situation, and the child's temperament. They manifest themselves in various ways.

Some babies bang their heads against the crib, or rock it violently. An older child will bite his nails, or make grimaces, blinking his eyes or twitching his lips. Simply trying to use the new words he is so rapidly learning may make a child stammer.

Don't increase your child's tension by nagging, scolding, or shaming him. It will simply establish the habit more firmly. Ignore these *symptoms* and try to eliminate their *cause*. Usually time will do it for you. You can help in some ways; for example, if you listen attentively to a stammering child he will relax because he doesn't have to try so hard to put his ideas across. If you play “manicuring” a child's nails you may make it easier for the biting habit to disappear. If tensions still persist, describe them fully to the child's doctor.

THE ONLY CHILD

There is no reason why an only child should be a problem unless you make him one, for example, by feeling guilty because you don't provide a little brother or sister. Be aware of the fact that children need the society of other children, and do your best to provide it as naturally and casually as possible. From the time the child is about two years old, he should occasionally have some contact with other children, if only to watch them play. As the child grows older, go to a little trouble if necessary to provide him with “part-time” brothers and sisters in the form of friends, making your house a pleasant place to visit, and permitting

him to visit other homes. A good nursery school can be very helpful. Make a particular effort to see to it that your child has companionship during the preadolescent period.

JEALOUSY (SIBLING RIVALRY)

It was once assumed that having siblings—that is, sisters and brothers—automatically made every child happy. Then the pendulum went in the other direction, and we began to hear so much about sibling rivalry that it almost seemed as though every personality difficulty stemmed from the effect brothers and sisters have on one another! There is some truth in both viewpoints.

The most important thing for parents to remember is that jealousy is very painful, and that pain can have bad effects. It may take a lot of ingenuity to avoid causing any more jealousy than is necessary, but it is worth it. Of course you can't prevent it entirely, and you certainly should not make children conceal it. But you can help your children to *overcome* it.

The first child is going to have to adjust to sharing the limelight. Make it as easy for him as you can while respecting the rights of the second child. For example, it won't hurt the new baby if you refrain from talking about him constantly in front of his older brother or sister, and it certainly won't hurt him to show you love them both.

Let your children know that they are not alike and that you would not want them to be because you love them just as they are. (This, incidentally holds true for twins, too! I advise parents of twins not to dress them alike.) Let children know that your love is so elastic it will always "go round," with plenty of room for one more!

Love locked up in parents can't do the child much good. Both fathers and mothers should show their love. Ask yourself whether you have had time (and patience) to show your love every day. True love is realistic love, given freely without asking anything from the child. It is quite different from the kind of love which the psychiatrist, Dr. John Levy, calls "*smother* love." (Fathers, as well as mothers, can be guilty of smother love.) You can praise and pet a child without pampering and overprotecting him. As a doctor I prescribe *plenty* of praise, encouragement, and affection. Also, set aside a few minutes or more every day that "belong" entirely to your child, not to duties and discipline.

THE ADOPTED CHILD

An adopted child needs, even more than your own child (if that is possible), to know that you love him. Should you tell him he is adopted?

By all means. I suggest that you let him know about it indirectly, by mentioning it casually and happily (but not stressing it) in his presence even before he is old enough to understand. Then, when he asks questions, answer them freely. The only difficulty I see in answering the questions of an adopted child are those concerning his real parents. Here I think it is permissible to stretch the truth a little, if necessary; for example, you can say that you are sure his own parents liked him but, for good reasons (which you don't know), felt it would be better for him if they let him be your little boy—which makes you very happy.

SPECIAL CIRCUMSTANCES

Children who are handicapped physically, or whose homes are upset by death or divorce, whose mother as well as father has to work, or who have illness in the family, face added difficulties. These circumstances are hard on the child—but they are also hard on the parent, and you will only make things worse if you feel guilty and apologetic about them. If you honestly feel that life is good, even though this is not the best possible situation, you will give your child an attitude that will be invaluable to him.

Be frank with your child, always remembering to keep your explanations on a level he can understand. In case of a separation, for example, you might tell a five-year-old, "We didn't get along together, so we decided to live apart. But of course we love you very much, and you'll go right on loving each of us, too, and being Daddy and Mommy's little boy." In case of death, admit frankly that you are unhappy because you miss the person who is gone, but that you have a lot to enjoy. Try to keep the child from being afraid you, too, will die—or that he will—by your matter-of-fact attitude that this is an extremely remote possibility.

Both boys and girls need a father and a mother. That doesn't mean that you should promptly remarry on that account. It does mean that you should do your best to provide a mother or father *substitute*—which can be in the form of relatives, friends, or schoolteachers, who, together, will at least partially fill the need.

THE HANDICAPPED CHILD

I discuss children's diseases in Chapter 20. Here I want to speak about your attitude toward a child who is chronically ill, crippled, or physically handicapped in any way. (I discuss mental deficiency on page 273.) Such a child must not be made to feel that his handicap is everything, he is nothing. He, and his brothers and sisters, must accept it as part, but by no means the most important part, of him. Such a child

should be treated naturally, without stultifying pity, anxiety, or guilt expressed by the desire to "make it all up to him." Let handicapped children know that they will be helped to help themselves, and that great progress is being made in regard to their difficulties. Adopt the attitude that there are many possibilities in life and the door is shut on only a comparatively small number of them.

Since most handicapped children will, as adults, associate with people who are not handicapped, I think it best not to "segregate" them. However, they often require different, or additional schooling, and special treatments, which should, in most cases, be started when they are young. Handicapped children often find encouragement in being with others like themselves for part of the time so that they don't get the feeling they are alone as far as their problems are concerned. The parents of handicapped children should ask their doctor, hospital, or State Board of Education (Division of Crippled Children, Commission for the Blind, etc.) for advice and assistance. The list of organizations given on page 587 provides the names and addresses of groups devoted to various illnesses, such as Epilepsy, Infantile Paralysis, Cerebral Palsy, Nephrosis, and so on; they can be of invaluable assistance. Or consult the Children's Bureau, U.S. Department of Health, Education, and Welfare, Washington 25, D.C.

YOUR CHILD'S EDUCATION

School plays a tremendously important part in the child's emotional as well as intellectual development. The process of growing up requires a variety of experiences that is greater than a home can provide. Adjusting to other children and to the tasks he must accomplish gives the child the practice he will need in order to live and work with others when he is adult. The very fact that he encounters children unlike himself develops his ability to discriminate. Don't worry if this ability develops slowly. At times he may adopt standards (including manners, customs, and grammar) you consider undesirable. But he has to learn how to be sociable as well as how to be himself!

A good school keeps an eye on the child's physical progress. His height and weight, general health, eyesight, and hearing are recorded, which is very useful to his regular physician. A good school is aware of the child's emotional and intellectual development, and any problems that may arise can be discovered early. The school should either supply or recommend competent assistance.

A good school is an adjunct to, not a substitute for, the home. Co-operate with your school, and with others in your community, to make it a good place for your child.

WHEN SHOULD A CHILD START SCHOOL?

Most states provide free education for children when they are about six years old. Many of them also provide *kindergartens* which they can attend somewhat earlier.

I believe that most children between the ages of three and six will benefit from a good nursery school and kindergarten. They give children a good introduction to the world around them, and a good start in playing and being with other children and adults. They also give the mother a rest from the constant demands of her children.

It is true that children who attend nursery schools and kindergartens are apt to get more colds than if they were in contact with only one or two other children. I think that the advantages make up for this if the child is healthy, especially in the case of only children or those whose contacts would otherwise be limited.

Unfortunately there are relatively few good, inexpensive nursery schools in the country. A good nursery school is not crowded, and has a teacher who is not only well trained but whose personality is such that she can help to create a warm, loving atmosphere, with no regimentation or emphasis on "manners." If you are lucky in having a good nursery school available, by all means take advantage of it. Children as young as two and one-half to three years old can benefit from a nursery school, but they must be introduced to it tactfully and gradually. In each case, even with older children, the individual child must be considered so that he can make a satisfactory transition from home to the new world of nursery school or kindergarten.

Many mothers have formed cooperative groups and have created excellent little schools. Perhaps you can help start a good nursery school in your town, or even in a rural community.

THE ART OF PARENTHOOD

The science of child-raising is a comparatively new one. Valuable as it is, we must never forget that being a good parent is also an art. Combine the two!

Learn as much as you can, but have confidence in yourself even if you don't know everything.

If you want further information, there are many excellent books dealing with children and their emotions. The following are among my favorites:

The Happy Family, by John Levy, M.D., and Ruth Monroe, Ph.D. (Alfred Knopf, New York). This book lives up to its title and really gives many

helpful suggestions designed to make family living a happier experience for all members. I like particularly the sensitive and frank attitudes toward sex in adolescence.

New Ways in Discipline, by Dorothy Baruch, Ph.D. (McGraw-Hill Book Co., Inc., New York). This book deals with methods of providing outlets for children's aggressiveness, etc., as well as instructive suggestions for making them feel secure.

Infant and Child in the Culture of Today, by Arnold Gesell, M.D., and Frances Ilg, M.D. (Harper and Bros., Publishers, New York). This book gives a complete, detailed account of the child's development from birth to five years, and the following one covers the years from five to ten.

The Child from Five to Ten, by Arnold Gesell, M.D., and Frances Ilg, M.D. (Harper and Bros., Publishers, New York).

A Manual of First Aid for Mental Health in Childhood and Adolescence, by Sidney Green, M.D., and Alan B. Rothenberg (Julian Press, New York). This book suggests ways to help children in case of accidents, death, separation, and other disturbing experiences.

Your librarian, schoolteacher, or bookseller can suggest others; or you might send a card to the Children's Bureau, U.S. Department of Health, Education, and Welfare, Washington 25, D.C., mentioning the particular subject in which you are interested.

Don't be reluctant or ashamed to seek advice on any problem that troubles you. A talk with the schoolteacher, school physician, your own doctor, or a pediatrician may enable you to work out the difficulty almost by yourself! If not, get in touch with an expert in this field, through your doctor, school, hospital, local Child Guidance Clinic, or one of the Mental Hygiene Associations I list on page 279.

Wise parents seek help, realizing that the majority of the problems found in their children are due to their own mistakes, or may arise merely from lack of information and confidence.

"THE HAPPIEST TIME OF YOUR LIFE"

Don't tell children "Childhood is the happiest time of your life." Like all the rest of us, they are entitled to look forward pleasurably to all periods of life (including old age)! On the other hand don't give them the idea that childhood is a painful but necessary prelude to real living. Each period of life is good in itself as well as for what it leads to.

One final bit of advice: Love your children as they are, and for what

they are. They differ in temperament and abilities—and who are we to say one kind of person is better than another? Don't expect, or even want, them to be *different* from what they are, but help them to be the *best* of their "types." If you succeed, even partially, their childhood and their future will indeed be happy.

Fevers and Other Sickesses of Infants and Children

INFANTS CANNOT TELL US that they are sick. Small children younger than about three years old should not be relied on too definitely for an announcement of symptoms of illness. Even older children may become so frightened, or so drowsy from the particular illness, that they do not tell us early enough that they do not feel well. It is the responsibility of parents, and those who take care of children at school and in child care centers, to learn to recognize the sick child by certain changes in the young one's behavior and appearance.

Early recognition of the sick child means a better chance of (a) reducing the seriousness of the disease itself, (b) eliminating complications, and (c) sometimes preventing fatal consequences. For example, an infant developed a fever and ate poorly. It also had a severe cough. The mother did not realize that the child was developing a serious illness, *pneumonia*, which had already caused severe inflammation of the lungs. By the time the doctor was called several days too late, the child was almost dead of the infection in the lungs and the dehydration which had complicated the pneumonia. Fortunately, the doctor was able to save the baby by intensive treatment at a hospital. The child would have responded to treatment promptly if the mother had recognized the signs of illness early enough. And the near-fatal complications would not have set in.

What are the signs of illness in babies and young children? Do not rely completely on a list of symptoms and signs of disease. Get to know the child. Usually, a mother or teacher can tell as soon as a doctor that a child is not feeling right. She senses that he is *not eating well* or is unusually *irritable*. Or she may notice that the expected spitting-up of milk has turned into true *vomiting*. The mother may notice that the child is *drowsy* at a time of the day when he is usually very alert. Also, the child's mother knows his cry. There are the cries of hunger, of loneliness, and of fright from strange sounds; these are very different from the *cry that*

accompanies pain. There may be some obvious explanation for the appearance of the pain cry, such as an open safety pin in the diaper. It is more likely to be caused by abdominal colic which is very frequent in infants. If the pained type of crying continues, take the child's temperature. If the temperature is elevated, notify your doctor. Even if the temperature is normal, and the crying does not subside in the next hour, it is best to tell your doctor about it.

Severe *diarrhea* is another sign of illness, as is also the appearance of *bloody or black bowel movements*.

Unconsciousness, stiff neck, and convulsions are all such important signs of potentially serious illness that your doctor should be told of them at once. If he is not available, take the child to your doctor's hospital, and have the interns start the treatment until your doctor can be located.

Cough is more unusual in infants than adults, and therefore is an important sign of illness.

A *grunting* type of breathing is also a potentially serious symptom.

Hoarseness or a hoarse quality to a baby's cry may be the sign of impending croup or diphtheria, and should always be reported to the doctor.

Fever. When babies and small children get sick, their illness usually shows itself quickly with fever. When babies are even moderately sick, temperatures will often rise very high. A fever of 102 to 104 degrees in a child may not mean serious illness. In a sick adult such a fever would generally be much more important. The best way to make sure that a child really has a fever is to take his temperature.

Subnormal temperature. This is important in very young infants as their particular response to severe infection.

THE THERMOMETER

A thermometer is a glass instrument about 4 inches long and as thick as a drinking straw. At one end it has a silver bulb. There are two kinds of thermometers, the oral and the rectal. Except for the shape of the bulb there is no really important difference between them. The oral (mouth) thermometer has a long, slender bulb which can be held securely under the tongue. The rectal thermometer has a shorter and rounder bulb which will not hurt the rectum. I suggest that you purchase two rectal thermometers. This type can be used either in the mouth or rectum and is less breakable. Keep them in separate containers marked "mouth use only" and "rectal use only."

Most thermometers for home use are in Fahrenheit degrees. These degrees are marked off in short lines and long lines. The first long line

is numbered 94° . Because of lack of space every other degree is numbered, so that the numbers read 94° , 96° , 98° , 100° , 102° , 104° , 106° , 108° . Between each long degree line there are four short lines which divide the degrees into $2/10$ ths.

The thermometer bulb is filled with mercury which spreads through the tube when the temperature rises. In reading the thermometer always hold the end opposite the bulb. Turn the glass between your fingers until you see a silvery bar that marks the top of the mercury. At whatever degree the mercury stops, that is the temperature. For example, if the mercury stops at the first short line after the degree marked 100, then the temperature reading is 100° and $2/10$ ths of a degree because, as you remember, each short line is $2/10$ ths.

At one place on the thermometer, a little above 98° there is an arrow which points to 98° and $6/10$ ths. This is considered to be the "normal" temperature. The "normal" is three lines above 98 degrees. Above this point, most thermometers continue the markings in red.

HOW TO TAKE TEMPERATURE

It is better to take a baby's temperature by rectum than by mouth because it is more accurate. Mouth temperatures are difficult to take in a baby because the mouth has to be closed for at least a minute before the mercury can register. It is very hard to keep the baby's mouth shut. Besides, he might bite the thermometer. Until the child is four to six years old it is safer and more reliable to take rectal temperatures.

If you have to report the child's temperature to the doctor, tell him whether you took a rectal or an oral reading because the rectal temperature will be slightly higher, about half a degree, or about $5/10$ ths, and the axillary (armpit) temperature, described in the following section, correspondingly lower.

Before taking the temperature, hold the thermometer tightly on the glass end, not the silvered, and shake it with a strong twist of your wrist, until the mercury is down near the 97 mark. Shake the thermometer down over a bed or a pillow so that it won't break if it should slip from your fingers. Then cover the bulb with petroleum jelly, K-Y jelly, or cold cream so that it can be slipped in easily and painlessly.

For an infant, the best way to insert the thermometer is to place him on his abdomen across your knees. Ever so gently, push the thermometer into his rectum. Don't jab it in; go as lightly as possible. Then hold it in place between two fingers with your palm flat across the buttocks. Never let go of the thermometer. It would be best to leave the thermometer in about 2 minutes, but if the baby is fretful and struggles, a minute will

be good enough. When the child is a little older, you can take his temperature by having him lie in bed on his side with his knees drawn up just a bit.

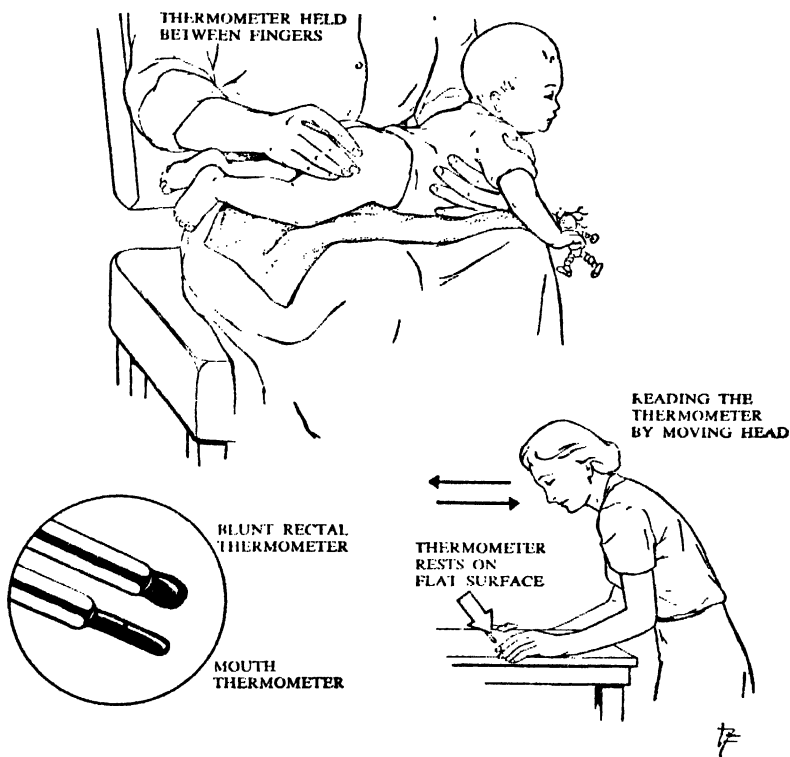


Illustration 20-1. TAKING THE RECTAL TEMPERATURE.

AXILLARY TEMPERATURE

Sometimes it is too upsetting for an infant or young child to have the temperature taken by rectum. In fact, no child who is critically sick should be made to struggle unnecessarily. In such instances, rather than do the child harm, you should take the temperature by the axillary (armpit) method.

Use the thick-walled, "rectal" type thermometer. Place the silvered bulb end in the deepest part of the armpit. The armpit is then closed tightly against the chest, and kept closed over the thermometer for 5 minutes, as actually timed by a clock.

Be sure your doctor knows you are reporting the axillary temperature,

not a rectal or mouth reading. Also, your doctor will want to know how long you kept the thermometer in the armpit.

MOUTH TEMPERATURE

When the child is ready to hold a thermometer in the mouth, take oral temperatures in preference to rectal or axillary (unless your doctor specifically requests the other method). It is important that you don't take an oral temperature right after the child has eaten or drunk anything hot or cold. Keep the thermometer in the mouth for 5 minutes, unless you are employing the rapid-reading type which only requires a minute. Even with the latter, it is still best to reinsert, and check the reading after another minute to make sure that the maximum temperature had been reached.

WHAT THE CHILD'S TEMPERATURE MEANS

Don't worry if your child's temperature reading is either a little above or a little below the "normal" 98 and 6/10ths marking. Even in healthy adults, the temperature may vary from the "normal." Another thing to realize is that for everybody, children and adults, the temperature is lowest in the very early morning and highest in the late afternoon, so that at four in the morning the temperature reading on the thermometer will be a bit lower than it will be at four in the afternoon. Immediately after running or any violent exercise, the temperature of small children may rise even to 100 degrees with no sign of illness. Therefore, it is best to take the temperature after the child has calmed down and rested. But if the temperature is as high as 101 even after exercise, the youngster is definitely sick and the doctor should be called.

A cold or anything more serious will cause a fever. If your baby or child has a temperature of 99 to 101 and *no other symptoms*, such as vomiting or a rash, you can wait before calling the doctor. Take the temperature every three hours. If it rises above 101, notify the doctor. If it falls to normal, there is nothing to be concerned about. If a slight fever of 99.5 to 101 lasts more than a day, notify your doctor about it. Always record the temperatures and the time when taken, for your doctor.

A WARNING ABOUT MEDICINES

In this chapter and elsewhere throughout the book I mention medicines that are helpful for various illnesses. There is a natural temptation to try

penicillin or sulfa tablets, antihistamines, and other medicines which you may have available at home. Medicines may have been left over from a previous illness. Never treat your child or yourself without the doctor's advice. Even such a valuable medicine as penicillin may cause allergic reactions. Or by giving it before the doctor has seen the child, you may interfere with his diagnosis. Laxatives, cathartics, and enemas can be harmful. They too should be given only with the advice of a doctor.

ACCIDENTS IN CHILDREN

The leading cause of death in the age group up to fourteen years is accidents. Household accidents such as burns, falls, and poisoning by common household substances, head the list. Elsewhere in this book I tell in detail about accident prevention, and the first-aid measures to be employed for them (see Chapters 22 and 23). Let me emphasize here that it has been estimated that two-thirds of the deaths by poisoning in children would be eliminated if *aspirin*, *sleeping pills*, and *kerosene* were kept in safe places (if you have children at home please check *now* with respect to these and other hazardous substances).

COLDS

You may as well become resigned to the fact that your child will catch cold. Children are usually more susceptible to colds than adults. It isn't the cold itself that you have to worry about, but what a cold may lead to if not completely cured. Serious illnesses can start from a simple cold, and every mother should be on her guard to prevent the complications.

There are many things you can do to reduce the frequency of a child's colds. He should not be allowed to get overtired or chilled. However, you will make a mistake if you put too much clothing on him and keep him indoors in an overheated room. All children, except very young babies, should be outdoors for several hours a day in good weather so that their bodies can get used to the colder air. The room they sleep in should have a temperature of about 70°. (See page 5 on control of temperature and humidity.)

A well-balanced diet may help a child resist the complications of colds, but unfortunately, will never prevent colds. That is, a child who is poorly nourished will get sick oftener than a well-fed one, but the well-fed child will still catch colds.

Even the healthiest child will catch cold faster than a healthy adult,

so try to keep him away from other people with colds. If Aunt Grace is offended because you won't let her kiss darling little Bobby while she has a cold, don't let it bother you. Aunt Grace will get over it; Bobby might not so easily.

The mother is usually in closer contact with her child than anyone else. If she has a cold or any other kind of infectious disease, she should mention it at once to the baby's doctor and ask him about the need for special precautions. Wash your hands often with soap and water and once again before handling the baby. If your doctor has you use a mask, sterilize it in boiling water every day and make sure that when you wear it, it completely covers your nose and mouth. Handle the mask by the strings or corners when putting it on or taking it off, never by the part you breathe through.

If your child is under two years and has a cold, make sure he is put to bed and kept warm in every part of his body. With older children it is not necessary to confine them in bed unless they are feverish. See to it that the room is free of drafts. You can get ventilation by opening the window in another room (see page 501).

A most important thing you can do for your sick child with a fever is to give him adequate amounts of fluid. Encourage him to drink small quantities frequently. The reason for this is that the child loses body fluids because the fever makes him perspire. Sick children often become quite "dried out," which lowers their resistance to germs still more. To prevent dehydration give a sufficient volume of liquids so that the child will urinate normal amounts. An adequate urine output will be indicated by a light yellow color instead of a dark brownish color which usually signifies insufficient fluid. In addition to milk and water, try fruit juices and carbonated drinks; grapefruit and melons are a good source of extra fluid.

In Chapter 25, *Nursing in the Home* (page 497), there are many suggestions for the care of a sick child. Be sure to read that chapter if your child becomes ill.

If you think you should give your child nose drops, ask your doctor first. Nose drops and antihistamine pills do not cure colds, but just suppress the symptoms. Most people find antihistamine drugs less satisfactory than nose drops for ordinary colds. For allergies, however, the antihistamines are useful. But always let your doctor decide whether he wants to prescribe any medicines and what kind it should be.

There are two simple measures you can employ to relieve a mucus-plugged nose in an infant. First, loosen the mucus by putting in the nostrils a few drops of sterile saline solution (add a teaspoonful of salt to a pint of boiling water, and then cool to body temperature). Next, after a few minutes, suck out the mucus with a rubber-tipped bulb. Second, try

increasing the humidity of the air that the infant breathes (see page 501).

The most important thing to know about a cold is that its virus paves the way for other germs called "secondary invaders." These are ones like the pneumococcus and influenza bacteria, *and especially the streptococcus*.

STREPTOCOCCUS INFECTIONS

The streptococcus germ can do much harm, causing sore throats, tonsillitis, sinusitis, middle-ear infection and indirectly, rheumatic fever and nephritis (kidney disease). Rheumatic fever or nephritis may follow a week or so after a streptococcus infection. This does not mean that most, or even many, streptococcus infections will be followed by these illnesses. However, by guarding against streptococcus infections, the chances of getting these more serious diseases will be lessened.

The first step in protecting your child against the streptococcus germ is to follow the general measures already outlined for preventing colds. Also, see Chapter 7, page 177, on Keeping the Germs Away. Colds set the stage for streptococcus infections, which are usually spread in much the same way as colds.

A fever which develops when a cold seems to be subsiding suggests a potentially serious complication until proved otherwise by the doctor. Some of the complications are described below.

Quick treatment by the doctor will promptly suppress streptococcus infection and will almost always prevent its complications.

SORE THROATS, SWOLLEN GLANDS IN THE NECK, TONSILLITIS, SINUSITIS, AND MIDDLE-EAR INFECTIONS

These are also usually caused by the streptococcus germ. *Tonsillitis* produces a high fever which lasts several days. The child may vomit and have headaches. His throat may become so sore that he can barely swallow. A doctor is needed to treat this sickness. The first thing you should do if the child complains of a sore throat is to put him to bed. Don't expect a quick recovery; it takes a while for tonsillitis to be cured.

The tonsils are situated at the back of the mouth and are made up of *lymphoid tissue*. They are like the *lymph glands* and have the same purpose, to waylay and destroy germs. Yet sometimes these glands get overloaded by a heavy invasion of germs and cannot do the job properly. So instead of destroying the germs, the tonsils become overwhelmed

by germs and are themselves infected. If the tonsils are repeatedly inflamed by many attacks of tonsillitis, then they have outlived their usefulness and must be removed.

SHOULD TONSILS BE REMOVED?

In years past tonsils were removed almost routinely. Now doctors feel that they should not be taken out except when there is a good medical reason for the operation. This means that the tonsils show definite evidence of infection.

Tonsils are best removed by surgery. Many family doctors and pediatricians are skilled in their removal. If not, they will arrange for a throat specialist to carry out the operation. The tonsils should be removed at a good hospital. Young children should have their mothers stay at the hospital with them during this experience because it is a strenuous one for a child.

Tonsils should not be removed *during the months when polio (infantile paralysis) is prevalent.*

Adenoids. These may be considered to be small "tonsils" located in the part of the throat behind the nasal passages. When they enlarge they can block the outlet from the nose so much that the affected child breathes chiefly through the mouth. Also, the enlarged adenoids may block the Eustachian tubes which connect the middle parts of the ears with the back of the throat. This condition may cause pain in the ears or a sense of pressure. It also can cause infections in the middle ear, and occasionally interference with hearing.

Adenoids are ordinarily removed along with enlarged tonsils. Occasionally, only the adenoids are removed.

Middle-ear infections. The illustration on page 136 shows the Eustachian tube that leads into the middle part of the ear. Through this highway, germs travel from colds, sore throats, infected adenoids, and tonsils. Middle-ear infections are usually terribly painful, and even a young child will point with distress toward his ear as the area where he knows something is wrong. A discharge from the ear is occasionally the first sign. Fever, vomiting, headaches, and drowsiness may accompany middle-ear infections. A doctor should be notified at once, or the child taken to the hospital if the doctor is not available. As you can see from the illustration (page 136), the middle ear contains important parts of the hearing apparatus. Also, because it connects with the mastoid cells the infected middle ear can lead to the dreaded complication of *mastoid-bone infection*. Also, the brain is not far from the middle ear. Neglected

middle-ear and mastoid infections have sometimes led to devastating infections of the brain. Before the introduction of sulfa medicines and the antibiotics, middle-ear infections and their complications were very serious and frequent illnesses. Now, if a doctor is notified early enough, he can stop these infections by the use of the antibiotics. It is rare, indeed, for infected ears to require incision of the eardrum to drain the pus, an operation that at one time was one of the most frequent in pediatrics. Also, mastoid operations have become a rarity. When I was a medical student, mastoid surgery was frequent enough so that some surgeons made it their major specialty.

SINUSITIS

The sinuses are air-filled cavities in the bones around the nose. They help give our voices a pleasant resonance. Also, the sinuses make the skull weigh less by replacing bone with air. Unfortunately they are very subject to infections, although less so in children than in adults. A tiny opening connects each sinus with the inside of the nose. During a cold, the infection may spread to the sinuses which will get clogged up with pus. The pus drips out from the back of the nose into the throat, causing the "post-nasal drip." This drip may cause the child to cough when he lies down. In a more severe case of sinusitis, the child will have fever and headache. Redness and swelling of the inner parts of the eyelids, the portions near the nose, may be signs of a serious form of sinusitis (ethmoiditis). There are many things the doctor can do to relieve sinusitis, such as using nose packs, suction, and medicines.

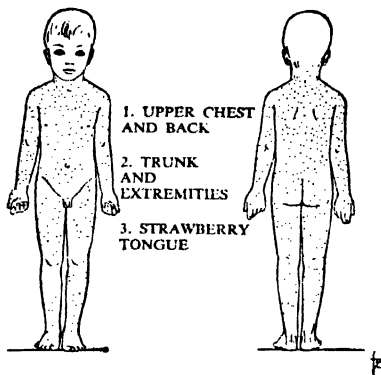
SCARLET FEVER

This is a streptococcus infection in which the streptococcus germ happens to make a special kind of poison (scarlet fever toxin) which causes a scarlet-colored rash. In other words, not all streptococcus germs can cause scarlet fever. Not everyone is susceptible to the rash-producing poison.

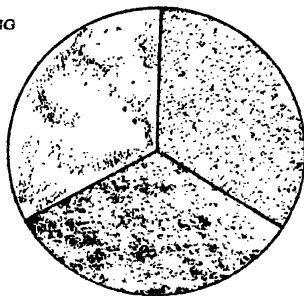
This is what might happen if such a streptococcus infection occurs in a family of three children: one child may get scarlet fever because he cannot resist the poison; a second youngster may develop only the streptococcus sore throat; and the third may carry the germ without being at all sick but may be able to pass it on to others.

At the beginning of scarlet fever, the child feels tired, restless, and irritable. Then he develops a fever and a sore throat, and begins to vomit. The skin feels hot and dry. After a day or so, bright red spots break out, starting in the body creases such as the armpits. The rash spreads to

ORDER OF APPEARANCE



C. PEELING

A. SMALL
ROSE FLUSHB. RAISED
AREAS*Illustration 20-2. SCARLET FEVER.*

the neck, the chest, and the back. It may later cover the entire body and from a distance look like a uniform coat of redness, except for the skin around the mouth which stays pale. But the tongue will become inflamed too, a blazing bright red ("strawberry tongue"). After about two weeks, peeling of the skin occurs, beginning either where the rash started or with the thinnest skin and ending in areas where the skin is thickest, like the palms of the hands or soles of the feet.

Medicines such as sulfa or penicillin may shorten the course of the disease, and are also tried in the hope of preventing complications like ear infections, swollen neck glands, and nephritis.

RHEUMATIC FEVER

This is a very serious illness, causing the death of more people between 15 and 24 years than tuberculosis and poliomyelitis combined.

It should be understood that rheumatic fever is a specific disease. This is somewhat confusing to a lot of people because the word "rheumatic" has been used to describe almost any affliction of the joints in older persons as well as muscle cramps or backache.

Although we still don't know the exact cause of rheumatic fever, medical science has accumulated a great many facts about the disease. It is a delayed result of a streptococcus infection which may still be present when rheumatic fever strikes but which more often has disappeared before the rheumatic fever itself becomes evident. Rheumatic fever usually follows a streptococcal infection like a "strep" sore throat, scarlet fever, tonsillitis, or middle-ear infection. The initial attack of rheumatic fever usually occurs during childhood. A well-developed case may affect many parts of the body, the most important being the heart. The disease attacks the connective tissues of the body, which explains its widespread nature.

The early signs of the disease are a feeling of fatigue, loss of weight or the inability to gain weight, anemia, striking pallor, and poor appetite. Since these are symptoms of many serious diseases, such as tuberculosis, the child should be taken to a physician as soon as possible.

Later on, more symptoms appear. There is pain in the joints, especially if they are touched or bent, and the joints may even become red and swollen. Rheumatic fever may also attack tendons not near the joints. This is what is known as "growing pains." The heart may become damaged—sometimes severely enough to cause shortness of breath and swelling of the ankles. The blood vessels anywhere in the body can be affected. Often the blood vessels in the nose of children are weakened, causing nosebleeds. Sometimes various types of rashes may appear.

A special form of rheumatic fever is *chorea*, commonly known as *St. Vitus's dance*. The brain is temporarily affected. This causes involuntary twitching, or writhing movements which are jerky and make the child so clumsy that he drops things and writes so illegibly that his handwriting can hardly be read. These symptoms must not be confused with ordinary nervousness, and your doctor will be able to tell them apart and recognize the chorea. Fortunately, chorea clears up, and doesn't cause epilepsy or serious brain trouble.

Most people with rheumatic fever do not have all these different symptoms—in fact, a person with all of them would be so sick that he would most certainly have come to the doctor's attention long ago. At least 50 per cent of the people who have chronic (long-standing) rheumatic heart disease which is discovered when they are grown, never knew that they had rheumatic fever when they were children. Careful questioning by doctors sometimes reveals that at some period in the past such a person suffered from repeated nosebleeds, mild joint pains, "growing pains," or perhaps a period of months when he

was just not feeling up to par. The important lesson from this is to try to spot the mild cases in childhood and to take appropriate steps to prevent attacks from occurring again and again.

PREVENTION OF RHEUMATIC FEVER

The key to prevention of rheumatic fever is the recognition of streptococcus infections. Early diagnosis by a doctor and treatment with penicillin is most important. ACTH and cortisone also appear to be helpful in the acute attacks of rheumatic fever.

When a person has had rheumatic fever once, everything possible must be done to prevent him from getting repeated attacks because of the damage it may do to the heart. With proper care most people who have had rheumatic fever will recover. With careful management, they can avoid further attacks by avoiding streptococcus infections.

By use of the antibiotics and sulfa medicines, the streptococcal infections which cause the recurrences can usually be controlled. Any child with rheumatic fever—or who has recovered from one attack—should remain under the continual care of a doctor or a heart clinic, so that every method can be applied to prevent recurrences of this potentially serious disease. By being cautious, these patients will be able to lead a fully normal life, or, at worst, be able to participate in all but very strenuous athletics. I know of a child who recovered from a most severe type of rheumatic fever and, despite persistent heart murmurs, grew up to become captain of the swimming team at a famous college. Of course, this is unusual, but it can happen.

HEART MURMURS

Murmurs are caused by changes in the heart valves and by the blood leaking from the scarred valves which do not close properly. The idea of a murmur usually sends shudders through parents. But murmurs are not always due to rheumatic fever; or a heart only very slightly affected with rheumatic fever may give a loud murmur. The captain of the swimming team I just mentioned had some of the loudest murmurs on record.

It is up to the doctor and not the parents to decide when the heart is healed and when the child may start playing and doing the things that normal children do. If there is any doubt, as there will sometimes be, consultation with a heart specialist (a cardiologist) should be obtained. Medical schools, various medical centers, and the American Heart Association (see page 591) provide the services of excellent heart specialists who charge a small fee or none at all. The doctor will do an

electrocardiogram and other important laboratory tests, and will study the child in many visits during the illness to decide when he is well.

Years ago, when we knew much less about rheumatic fever and did not have such excellent laboratory tests, doctors used to advise a good deal of bed rest or very little activity for people with heart murmurs. These people may have had rheumatic fever in a mild form and could, perhaps, have become captains of swimming teams. The bad psychological effect of such needless restrictions was worse than a mild impairment of the heart.

So, if your child has had mild rheumatic fever, don't coddle him or make him feel in any way that he is an invalid and different from other children. Of course, see to it that he obtains plenty of rest, sunshine, and fresh air and a good, nourishing diet that contains plenty of minerals and vitamins. This you should do for any child to build up his resistance against germ diseases, but with the child who has had rheumatic fever, take special care. If he has had a severe illness and must have his activities restricted, teach him not to overexert himself, but otherwise to think and act like other children. The prevention of further streptococcus infections is the number one measure, and your doctor can help advise you about this.

See your doctor for regular checkups of your children. If a child should turn out to have undiscovered rheumatic fever, the doctor can help you take the proper precautionary measures against repeated attacks.

WHOOPING COUGH

Whooping cough starts like an ordinary cold, with running nose and perhaps a little dry cough. Sometimes hours, days, or even weeks go by and nothing further seems to happen. The mother thinks her child is cured and sends him back to school. But then things begin to happen. He feels chilled; he begins to vomit; his temperature rises and the coughing spells become longer. Soon he is coughing a great deal, about 8 to 10 times without catching his breath. When he finally does, it is with a long noisy intake of breath, which is where the whoop comes in. If you keep in mind the important fact that *this* cough does not appear until about the second week, you won't be unduly alarmed when your child has a cough right after he catches cold.

The three main signs of whooping cough are (1) the long spells of coughing, (2) the whoop, and (3) vomiting. The average case of whooping cough lasts for about six weeks, "two weeks coming, two weeks running, and two weeks going away." In deciding whether or not

a cough which has gone on for a long time is whooping cough, the doctor may need to do some laboratory tests.

Whooping cough is a dangerous disease, even a killer. It can be a killer because it paves the way for pneumonia.

During the first two weeks whooping cough is very contagious. Be very careful to see that it is not spread to other children. Cough medicines are not very helpful. It is extremely important to prevent the child from being chilled during the illness. New medicines for the effective treatment of whooping cough are being tried. Be sure to call your doctor when you suspect whooping cough, and have him follow the illness through until complete recovery is assured. (See page 175 on protective immunizations against whooping cough.)

MEASLES

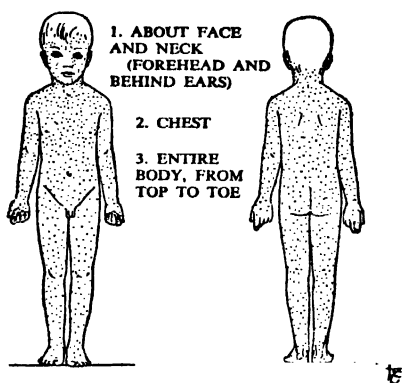
Measles is a very contagious disease caused by a virus. Because it is so contagious, almost every child catches it. The disease starts with the same symptoms as a cold—the youngster will run a fever, sneeze, and cough. His eyes are sensitive to light, become pink from inflammation. His eyes and face look puffy. All these changes give the “measly” look. After a few days a rash appears, very characteristic of measles. These spots are pink and may show up first behind the ears, on the forehead or the cheeks, and then spread downward. Usually, the spots itch when the fever is at its highest point. The rash lasts for two or three days and then begins to fade out. By then, the child feels much better.

There is really nothing you can do to prevent measles permanently. The best thing is to get it and have it over with. In fact, if you do try to prevent it at a certain time, you are merely delaying the infection for a later day. However, if your child is very young or not in the best of health, the doctor may take measures to prevent measles until the child is older or stronger and better able to see it through. The protective substances against measles work if given within five days after exposure.

“Gamma globulin,” a protein taken from normal pooled blood, is about the most powerful material to prevent or weaken measles. Serum taken from the blood of someone who has already recovered from measles is also effective. Still another kind of protective substance is obtained from the afterbirth (placenta) of women who have once had measles.

Ordinary measles is a mild childhood disease, but it may pave the way for an invasion by other germs. Only the minimum number of people who are required for the care of the child should be allowed in his room. Adults may infect the child with the germs of other diseases. The

ORDER OF APPEARANCE



B. SLOTCY
AREAS
(PINK-RED)

A. GENERAL
PINK RASH

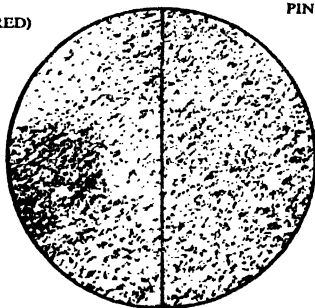


Illustration 20-3. MEASLES.

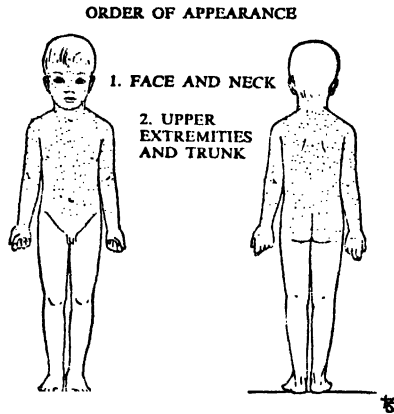
child with measles should be kept in bed and given plenty of fluids. If light bothers the sick child's eyes, protect them with an eye shade or visor, and, of course, avoid glare. The sensitivity to light (photophobia) will clear up completely without any effects on the eyes.

GERMAN MEASLES

Like ordinary measles, German measles is also caused by a virus. It begins with a slight cold, a little fever, and a sore throat. Then the rash comes in the form of rosy colored spots that quickly spread over the entire body. At first, the rash looks like a measles rash, then like scarlet fever. The lymph glands behind the ear and in the neck swell up.

German measles is a contagious disease. It lasts about two or three

days. German measles is usually a mild disease, without complications, in children. The real threat is when an adult woman catches it during the first three months of pregnancy. In such a case there is a slight danger that the child will be born deformed. Therefore, pregnant women who have never had the disease should avoid any contact with children who have German measles. Conversely, healthy young girls should try to contract German measles to obtain immunity later in life.



FINE PINK RASH

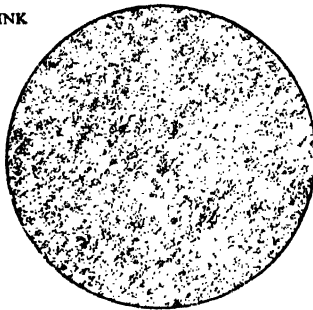


Illustration 20-4. GERMAN MEASLES.

MUMPS

Mumps is a highly contagious childhood disease caused by a virus. The parotid gland beneath the ear which secretes saliva swells up, first on one side of the face and then sometimes on the other side. Less often,

the virus attacks other salivary glands under the jaw. Other glands of the body are rarely infected.

In adult males, mumps can be a painful and even dangerous illness because it can attack the testicles, sometimes leading to sterility. If the father or any other young male adult in the household has not had mumps, he should notify his doctor immediately regarding protective measures.

Call the doctor to make sure the sickness is mumps and not some other disease that may imitate it. For example, an infection of lymph glands by bacteria may look like mumps, but the treatment is quite different. Mumps is treated by rest in bed until the fever and swelling have cleared.

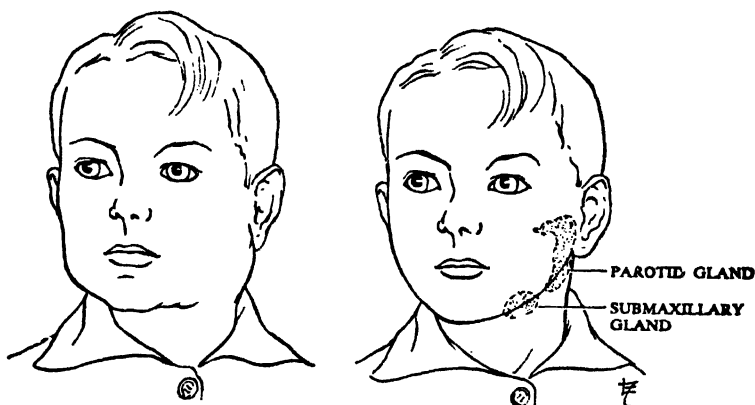


Illustration 20-5. MUMPS.

LEFT: Characteristic swelling due to the mumps. RIGHT: A healthy child, showing the location of the glands involved.

CHICKEN POX

This is a virus disease. Chicken pox and measles are the most highly contagious and therefore the most common diseases of childhood.

First, pimples break out, usually beginning on the chest. Then the pimples become blisters which dry into scabs. The blisters come in a series of breakouts, one after another. The main danger lies in the fact that the blisters itch, and they may become infected by scratching. To ease the child's itching, place him in a warm starch bath. There should be two handfuls of starch in the tub. Because you will be unable to prevent a certain amount of scratching, keep your child's hands clean by washing them several times a day. The scabs are not infectious.

Call the doctor if the child appears really sick or has a fever. This is mainly a precaution to rule out smallpox or other serious diseases.

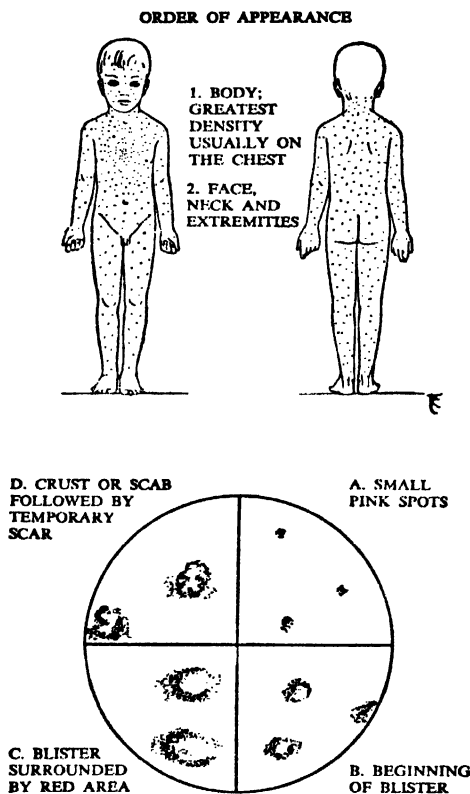


Illustration 20-6. CHICKEN POX.

ROSEOLA INFANTUM

Roseola infantum, or exanthem subitum, is a fairly common fever occurring in children during the first three years of their lives. It is always worth considering when the child has a fever, is irritable and drowsy, and doesn't have any other diagnostic signs such as a rash. In roseola infantum, a strange situation exists as contrasted with most childhood diseases with rashes. When the flat, reddish rash of roseola infantum finally appears after three or four days of the fever, the disease is ended, and the fever and other symptoms quickly disappear. With illnesses such as measles, scarlet fever, and chicken pox, the rash heralds the onset of the most intense phase of the illness.

Roseola infantum yields without treatment. Its cause is not known with certainty, but it is presumed to be a virus. There is no specific treatment for the disease which fortunately appears to confer immunity for life.

DIPHTHERIA

Fortunately, this terrible disease has been almost completely eradicated in the United States by means of immunization. Before immunization was introduced this disease killed over 25 per cent of its victims. Some who recovered were incapacitated by the devastating aftereffects of diphtheria on the heart and other organs.

Every child should be immunized early and completely against diphtheria. If there is doubt about the completeness of the immunization against diphtheria, there is a check method called the Schick test which can be applied. The doctor injects a small amount of the poison excreted by the diphtheria germs into the skin. If there is sufficient antitoxin in the child's body to protect him against the disease, the Schick test will prove to be negative, and there will not be any reddened, blistered area on the skin. If the test is positive, the child must be further immunized until a negative test is obtained.

Diphtheria is caused by a bacillus type of germ. This germ usually grows on the tonsils and throat. It can infect the nose and larynx. When diphtheria develops it causes an intense reaction in the throat or wherever the germs are growing. The throat will be sore and swollen, and there may be a grayish membrane covering the tissues. *This membrane may get so large that it, plus the swelling, can obstruct the breathing.* That is one reason why diphtheria needs immediate medical attention, usually in a specialized contagious-disease unit of a hospital. Another reason for the high fatality rate of the disease is the powerful soluble poison given off by the growing diphtheria germs. This toxic material is absorbed into the body, and affects the heart and other vital organs. It may paralyze important nerves that control swallowing or breathing.

Fortunately, a powerful antitoxin is available which can be injected to neutralize the poison produced by the diphtheria germs. However, the doctor must administer this antitoxin before the child has been sick more than three days. After that the mortality rate becomes very high despite the use of large quantities of this specific antidote.

Diphtheria usually gives plenty of warning that something serious is happening to the child. There will be fever, prostration, vomiting, as well as the sore throat. Sometimes bloody mucus appears in one or both

nostrils. The doctor should be notified at once whenever diphtheria is suspected.

IMMUNITY TO CHILDHOOD DISEASES

One attack of mumps, chicken pox, ordinary measles, and German measles *usually* gives protection for a lifetime. Your child can—and *should*—be immunized against smallpox, diphtheria, and whooping cough. I give a schedule of essential immunization, and also discuss other types of immunizations, on page 175. I like to include immunization against tetanus, too. Other immunization will depend on geographical considerations. Children who are exposed to typhoid fever on camping trips or who live in rural areas should receive typhoid vaccination. Similarly, parents who live in areas where they are exposed to ticks that carry spotted fever should ask their doctors about the need for immunization of children against this disease. Before traveling to different parts of the United States or other parts of the world be sure to discuss with your physician the immunization needs of every child and adult who will make the trip.

DIARRHEA IN BABIES AND YOUNG CHILDREN

Half a century ago, diarrhea was the leading cause of death in infants. There were many reasons for this, including: contaminated water and milk; poor sanitation and refrigeration, which encouraged the growth of germs; and inadequate knowledge concerning infant feeding and therapy. Exposed to harmful bacteria at a time in their lives when their immunity was low, countless young children died of intestinal infections which the doctors of that period were unable to combat.

Today, this situation has been so greatly improved that we are apt to forget that diarrhea is still a serious threat to the health of babies and young children.

Fortunately, with good medical care almost every child with diarrhea can get well. The important thing is for the parents to understand the danger signals so that treatment can be started early enough.

If a child develops severe diarrhea—for example, watery stools passed more than once an hour—you should call the doctor without delay. If he cannot be reached, take the child to the hospital. Less severe diarrhea can usually be cared for at home, especially if it has been caused by

foods or a formula that does not agree with the child. However, if bacterial infection is setting in, the diarrhea may progress to the point of bloody stools. This situation calls for immediate medical help.

Assuming that the diarrhea is mild, and you cannot reach your doctor, this is what you should do:

1. Discontinue the usual formula or foods that the baby or child has been taking. Don't worry about his starving; he will be benefited by resting the inflamed bowels.

2. Stop all medicines until you talk to the doctor, because paregoric, patent medicines, and many other medicines may make the diarrhea worse.

3. Change to the following formula as a temporary measure: 1 quart of boiled water, 2 tablespoonfuls of sugar or Karo syrup, and one level teaspoonful of table salt (sodium chloride). Prepare this formula in the usual way, taking sterile precautions as described on page 378, and offer it to the baby in small amounts as frequently as he will take it. Alternate this formula with one made from equal parts of warmed Coca-Cola and water. Coca-Cola contains the essential potassium salts that are lost from the body when diarrhea sets in.

Offer the same things to older children. They will usually drink the Coca-Cola, but they are apt to refuse the "formula" of water, sugar, and salt. Any clear liquid they want can be substituted for this. However, they *need* salt, which is not present in plain water or drinks such as ginger ale or very weak, sweetened tea. It should be added, in the proportion of a level teaspoonful to a quart—that is, $\frac{1}{4}$ level teaspoonful to $\frac{1}{2}$ pint, which you can add to most beverages without the child's even noticing it.

DEHYDRATION

The greatest threat to the life of a child with severe diarrhea comes from dehydration. The loose, watery stools drain out water *plus* valuable chemicals from the body. Such substances as sodium, chloride, and potassium are essential for the regulation of the body's fluid and acid-base balances. If diarrhea continues unchecked, severe illness or even death will result from the ensuing dehydration and the acidosis that accompanies it. Dehydration may show itself by: (a) decrease in the amount of urine. The urine looks dark yellow or light brown; (b) loss of the usual elastic quality of the skin; (c) sunken eyeballs; (d) rapid breathing; (e) drowsiness or even unconsciousness.

In severe cases accompanied by vomiting, the doctor will have to replace the fluid and the sodium and other chemicals by injections into the child's veins. Such injections have frequently saved the lives of desperately sick infants.

CROUP

This disease is really a spasm of the larynx, the voice box in the neck where the vocal cords are located. If the spasm is severe, the air cannot reach the lungs, and the child begins to choke. Fortunately, the disease is rarely fatal. But it can be terribly frightening to both the child and the parent. It usually comes in spasms. The attack is generally precipitated when the child starts to breathe cold air, especially at night when the windows are opened in the child's room. The mild fever and the apparent healthy look of the child between the spasms—and the fact that the child has been immunized against diphtheria—usually make it certain that the illness is croup, not the onset of diphtheria of the larynx. However, always notify the doctor when the child develops a hoarse, croupy voice or cough, or seems to be having spasms of difficult breathing.

Occasionally, a severe attack of croup may represent an emergency before the doctor can be summoned. The spasm can be relieved by placing the child in a place where there is warm, moist air, away from all drafts. A croup tent can be improvised by boiling water in a kettle or pan on an electric hot plate under a blanket which is placed over the child *and the parent. The parent or other adult must always sit with the child during the treatment.* The reason for this is important to know: more children have been burned to death during treatment for croup than have died of the disease itself! Keep the steam going until the spasm has been relaxed. Then be sure the child sleeps in a warm room which is ventilated only through a door leading into another room that is kept warm and free of drafts.

If a croup tent cannot be improvised, or you cannot get a good water vaporizer rushed over from your druggist, fill the bathtub with steaming hot water, or turn the shower bath on and keep the hot water running. Keep the window and door closed so that the bathroom becomes saturated with moist air. This technique usually is as good as the above methods. Sit with the child, never taking a chance for a second that the child can be trusted not to fall into the scalding hot water. Even an older child who starts a paroxysm of croup may become so breathless and frightened that he doesn't know what he is doing.

The attacks of croup tend to repeat themselves, usually the same night. Ask your doctor what to do to prevent further attacks. He may leave medicine that will help shorten another attack, if the spasm cannot be prevented.

Note: If an attack of croup doesn't respond to the above measures in 20 minutes, or if high fever is present, the situation is a serious emergency. If you cannot reach your doctor, rush the child to the hospital.

MENINGITIS

Meningitis is always a serious disease because it affects the coverings of the brain. It may be caused by different varieties of germs, such as the dreaded meningococcus, streptococcus, or pneumococcus. Other bacteria can produce the disease, too. The epidemic form is generally the result of the meningococcus.

Until the modern era of sulfa medicines and antibiotics, meningitis was one of our most fearsome diseases. Now, if treated early, it can usually be cured. Also, when epidemics threaten, we can give medicines to prevent the spread. There are no successful vaccinations against the common forms of meningitis.

The typical attack causes high fever, severe headache, convulsions, violent vomiting, and drowsiness or complete unconsciousness. There may be a skin rash. The neck and back muscles may become stiffened and painful.

A doctor should be notified at once, or the child rushed to a hospital if your doctor cannot be reached, so that treatment can be started until he is located.

CONVULSIONS

Convulsions may signify the onset of serious diseases such as meningitis, but this is not necessarily true even when there is fever. However, the combination of convulsions and fever is so potentially ominous that medical attention must be obtained immediately. Fortunately, many of these cases turn out to be *meningismus*—false or simulated meningitis. For example, during pneumonia and other illnesses, there may be enough irritation of the brain to set off convulsions. However, as soon as the pneumonia or other infection is brought under control, the convulsions disappear.

Convulsions without fever may indicate epilepsy. This important disease of children and adults is described fully on page 684.

WORMS

I describe worm infections (more properly called “intestinal parasites”) at this point because parents so often blame them for convulsions in children. It is a safe rule that convulsions are never caused by worms.

Another misconception about intestinal parasites is that they are contracted from an infected household pet or other animal. *The chief worm*

infections of children are transmitted from humans to other humans.

There are three main types of worms that affect children in the United States. These are the long roundworm, *Ascaris*; the tiny, thread-like *pinworm* which is also called the *seatworm*; and finally, the *hookworm* which lies between these other two in size. These three worms cause many more infections than either the *tapeworm*, or the *trichina* worm which infests pork. Children are less susceptible than adults to trichinosis, but they, too, should be given pork or pork products only after these have been cooked thoroughly, as well as having been inspected by the U.S. Government (see page 181).

ROUNDWORM INFECTION (ASCARIASIS)

These worms look like earthworms, and may sometimes be seen in the bowel movements, or in the child's bed. Occasionally, one may be vomited. The worm should be saved to show to the doctor.

A child infected with roundworms may become irritable, and restless at night; he will probably develop an erratic or poor appetite. He may not gain weight, or may seem to tire easily.

The worms can be discharged from the intestine by special medicines which must be administered under a doctor's care. Do not try to treat worms by getting medicines at a drugstore. Children have died from overdosage of these medicines. Also, only a doctor knows how to judge when the treatment has been completely effective. Unless all the eggs and worms are killed or expelled by the treatment, the sickness will return.

HOOKWORM INFECTIONS

This intestinal parasite infects children in the southern states. It enters the body through the skin, usually when children walk barefooted in infected soil. The hookworm then travels through the blood into the lungs, and gets into the air passages, from which it enters the esophagus when coughing occurs. After arriving in the intestine via the esophagus and stomach after this circuitous journey, it takes up its permanent existence in the small intestines. It breeds at a lively rate. Being parasites, the worms live off the infected person's food and body, and take valuable protein and blood-building materials from the human body. That is why anemia is one of the chief symptoms of severe hookworm infestation. The child usually looks run-down and listless.

The diagnosis of hookworm disease is made by examination of the stools for the characteristic eggs of the worms. Treatment is effective

when administered by a physician or health officer. A good preventive is a pair of shoes or sneakers, but unfortunately these "medical items" are not always available in the low-income areas that constitute the so-called "hookworm belt." Also, there is a problem in getting some children to give up the pleasures of walking barefoot. However, if they were educated by parents, teachers, and doctors about the dangers of hookworm disease, I believe that children would cooperate in wearing shoes at least compromise to the extent of wearing sneakers or sandals.

PINWORM INFECTIONS

The pinworm is also called the seatworm. The medical term for its infection is *oxyuriasis*. Pinworm infections occur in the intestine. The tiny worms measure less than a half-inch in length. They do not debilitate a child as a heavy infestation with roundworms or hookworms will. But they cause trouble by their habit of coming out around the anal region during sleep. The worms irritate the region around the anus, leading to painful scratching and restless sleep. Occasionally, a pinworm will migrate into the tiny vaginal opening in a female child where it will cause intense itching and distress. You may be able to locate it by illumination with a flashlight, and remove the worm with a swab of cotton on an applicator rod. Put the worm in a sealed bottle for the doctor to examine, or burn it if the diagnosis of pinworm infection has already been made in the child. Do not treat pinworm infections yourself. Let the doctor prescribe the treatment. Also, he will decide what to do about the other members of the family. He will also instruct you in disinfection of the bedclothes and other materials that may be harboring the eggs of the pinworms.

HEAD LICE

The medical name for *head lice*, or *nits*, is *pediculosis capitis*. The head louse is a tiny insect which lives on the scalp and sucks blood for its food. Almost always, the lice affect only the back portion of the scalp. The eggs of the louse are called nits. They are contained in silvery oval-shaped envelopes which are attached to the shafts of the hairs. These nits can be seen when they are plentiful, and are just large enough to be combed out by a very fine steel comb.

When the lice bite the scalp, they cause itching which leads to scratching. This, in turn, produces infections of the scalp with inflammation of the lymph glands of the neck.

The condition can be diagnosed definitely by a doctor or nurse who can recognize the characteristic nits. School children are particularly susceptible to head lice, but anyone, rich or poor, of any age, may contract pediculosis.

In the case of children, treatment at home should be supervised by a doctor, school nurse, or public-health nurse. There are two reasons for this. (1) The two best remedies are hazardous to use in the home. The mixture containing kerosene is inflammable, and the carbolic acid solution contains a dangerous poison. (2) It is difficult to make certain of getting rid of the head lice permanently, and to avoid infections due to scratching. It is also necessary to take precautions in regard to other members of the family.

Commercial preparations such as Cuprex and Kwell are gaining favor. However, these tend to kill only the lice and not the nits. Therefore, the treatment must be repeated several times, at weekly intervals, to give the nits a chance to hatch out and reach the stage at which they can be destroyed.

It is very important not to make a child with head lice feel inferior or self-conscious. Avoid making the diagnosis known to him or his playmates. It can be passed off as "dermatitis" or "infection of the scalp."

INTUSSUSCEPTION

Intussusception is a less common illness than many mentioned in this chapter. But it does happen frequently enough so that you should be on guard against it, because unless this condition is recognized within a few days of its onset a fatal result can occur. It results from the telescoping of a part of the intestine into the section ahead of it. You might imagine a smaller pipe sliding into one with just a slightly larger diameter. The smaller pipe will tend to slide down through the larger pipe, causing obstruction. Intestinal obstruction is always serious. In children it quickly leads to fatal results. Intussusception sometimes occurs when the intestines are partially filled with masses of roundworms. But usually there is no obvious cause. The child appears to be healthy. Then paroxysms of abdominal pain set in, with vomiting, and restlessness. Within 12 to 24 hours bloody mucus is passed by rectum instead of the usual fecal matter. On the second day, fever as high as 106 to 108 degrees may appear. Death can occur within two to four days after the onset unless the condition is remedied by surgical operation. This cures the condition completely. Intussusception occurs most frequently in the first year of life, occasionally in the second, and only rarely in older children.

POSTURAL ABNORMALITIES

A great many of the things I said about *posture* on page 8 apply to children as well as to adults. However, I feel that special attention should be given to this matter where children are concerned, because failure to attend to difficulties and defects in the posture of children can result in permanent deformity.

The term *poor posture* is a very broad one, covering minor as well as potentially serious problems. It can be caused by weakness, disease, or deformity involving the muscles, bones, or joints. Some examples include: *rickets* (see page 34), *Pott's disease* (page 180), *congenital dislocation of the hip* (see page 677), *flat feet* (see page 144) and *scoliosis* (curvature of the spine).

Poor posture can also be due to defective vision or hearing. For example, a child who is nearsighted or hard-of-hearing is apt to thrust his head forward in order to see or hear better, and as a result his shoulders and back are thrown out of line. Clothing that is too heavy or too small may keep a child from standing straight. A bed or chair that prevents the child from lying or sitting properly can also be responsible for poor posture.

Finally, but by no means least important, emotional factors can cause postural difficulties. A shy, unhappy child who feels inferior may slump and hang his head continually. Emotional problems, especially in adolescence, have caused many cases of curvature of the spine.

I wish that I could persuade parents and teachers never to scold or nag at a child about his posture. It is obviously cruel as well as useless to tell a child with a physical weakness or disease to stand up straight and to walk properly. It is also likely to do more harm than good if the child's poor posture is due to emotional difficulties.

Regular physical examinations will determine whether or not a child's posture is poor, and will usually reveal any condition which could cause poor posture in the future. If you are concerned about your child's posture, don't wait for his regular examination to fall due, but consult a doctor as soon as possible. Taken in time, corrective measures can usually prevent difficulties and even deformities. If special exercises are needed, they should be supervised or at least initiated by a doctor or some other person with special training.

SKIN DISEASES IN CHILDHOOD

Both the infant and young child are subject to a considerable number of minor and even serious skin diseases. Most of these, such as impetigo,

scabies, and fungus infections of the skin, have been mentioned on pages 148-161 in the discussion of the care of the skin. Also, the more serious diseases such as eczema and psoriasis are taken up in separate sections later because these skin conditions affect adults as well as children. Erysipelas is a streptococcus infection of the skin which also occurs in adults (page 161).

Besides such obvious skin conditions as diaper rashes, there is one skin disease on which children seem to have a monopoly. This is *ringworm of the scalp*. Adults very frequently are affected by fungus infections of the smooth skin; epidermophytosis, or athlete's foot, is a common ringworm infection between the toes. Why only children get the ringworm infection of the scalp is a strange problem. But it is true that this infection, which has the medical name of *tinea capitis*, is truly rare in adults. It is a stubborn form of ringworm infection in children, and frequently one school child infects another. Treatment is slow and difficult, and requires patience on the part of the doctor, the child, and the parent. Most of the cases occur by human infection, but it is believed that about 10 per cent may be acquired from cats, dogs, and horses which harbor a form of ringworm that can affect the human scalp.

The disease is recognized chiefly by the bald patches resulting when the fungus weakens and destroys the hairs, which fall out. The itching and scratching may lead to irritations which may be confused with bacterial infections. However, if a doctor is given a chance he can make the diagnosis of the underlying ringworm of the scalp by special diagnostic methods. One of these is the use of an ultraviolet lamp which causes the fungi to fluoresce in the dark, making it possible to see them in the hair. Also, the doctor will confirm his suspicion by finding the characteristic spores of the fungi. This is done by examining the infected hairs through a microscope after treatment of the hairs with chemicals.

PETECHIAL RASH

Although infants and children often have rashes that are not serious, there is one type which, though rare, is an indication of a potentially dangerous disease. This is called a *petechial rash*, and is caused by bleeding under the skin. If your child has a rash, you can determine whether or not it is of this type by pressing one, or more, of the spots between your thumbs. If it does not blanch—that is, if the color still remains—call a doctor immediately.

Consult the Index for page references of the following, which are described in other sections of this book:

Appendicitis

Asthma

Diabetes

Dysentery and Typhoid Fever

Epilepsy

Head injuries

Nephritis (Bright's Disease)

Pneumonia

Poliomyelitis (Infantile Paralysis)

Pyelitis and Pyelonephritis

Tuberculosis

Adolescence

AT TEN YEARS of age we are children; at twenty we have been transformed into adult men and women—perhaps even into the parents of children.

During this ten-year period we have gone from dependent childhood to independent adulthood. So gradually that the changes are scarcely perceptible, or so rapidly that they seem to occur over night, a flat-chested, chunky little girl becomes a glamorous, full-breasted woman. The small boy next door shoots up into a tall young man, the possessor of a deep voice and a beard that requires daily shaving. Emotionally they have both changed, too, most of all in their attitude toward each other.

As a doctor, I am vitally concerned with these adolescent years. It is during this period that we face the greatest danger from certain illnesses, such as tuberculosis and Bright's disease. The development of the sex organs adds new items to the medical agenda. Emotional illnesses must be guarded against, including schizophrenia, that malignant mental sickness which frequently chooses its victims from this age group.

Naturally, each period of life has its special health problems. Why, then, do I take this particular age so seriously? For one thing, we doctors are confronted with a new situation. At this time we cannot simply tell parents what to do for their children, or explain to responsible men and women what they should do to guard their own health. We must address both young people *and* their parents—young people who have matured in everything but experience, and parents who, while feeling responsible for their well-being, no longer can or should hold all the reins in their hands.

If the first ten years of a child's life have been good and healthy ones, the chances are excellent for a successful adolescence. But this will still be a period during which the doctor, the parents, and the maturing child must work together for that wonderful goal—a healthy, mature body and mind at 18 to 21 years of age, at the time that the young person becomes a citizen and a voter, legally free to lead his or her own life.

Just because I take adolescence seriously, please don't think I'm going to join in the hue and cry against our teen-agers. Every generation gets into a lively stew about the adolescents who—in its opinion—will go to the devil at a fast rate unless they listen to their elders. Adolescents have rarely listened very much in the past; and most of them have managed to come through all right.

On the other hand, *more* of them will come through with *less* difficulty if we and they recognize the problems associated with this period—problems for the parents as well as for the younger generation. With understanding on both sides, controversies in the home will settle down to reasonable proportions. I am not claiming that they will be eliminated. Emotionally, the “birth” of an adult is scarcely less of an event than is the actual, physical birth of a baby. But it is just as rewarding. If parents can remember themselves as adolescents, and if children try to understand their parents' dilemmas—if they can talk freely and even joke a little about their respective problems—tensions will be greatly relieved.

PROBLEMS OF ADOLESCENTS

Nature has a way of driving a child faster than is desirable in our complex society. Many boys and girls are sexually mature by the time they are thirteen to fifteen. Physically, they are ready for mating. *But they are not ready for marriage with all of its responsibilities, including parenthood.* Aside from the difficulties they would face in establishing and supporting a home, they are not yet adult emotionally. They want to be grown-up, yet in some ways they are still attached to childhood.

These are the two main problems adolescents face: *independence* and *sex*. They must break away from the old ways of living within a familiar framework. They must resolve the question of what to do about sexual desires; and no matter how much they are told or how much they read, they must do this themselves—or try to. In other words, what they have to arrive at is not so much a workable theory of sex, but what actually to do about the new reactions, sensations, emotions, or whatever one calls them, which are bombarding them.

As though this were not enough, a number of factors over which they—and their parents—have little control, often complicates the picture. For example: shortly before puberty, or in early adolescence, boys and girls pass through a period of preferring the members of their own sex. With varying degrees of intensity, girls avoid boys, develop “crushes,” and swear eternal fidelity to some girl friend. Boys look down on girls, worship a hero, become devoted to a chum. This is a natural and valua-

ble phase of life. It is followed by an interest in members of the opposite sex, which leads to the choosing of a mate.

However, these events don't always proceed according to a timetable. The age of children in a group, such as a school grade, varies. Those who started school early, or are unusually bright or interested in their studies, may be as much as two years younger than many of their perfectly normal classmates. A normal child may also, for any number of reasons, be older than the others in his group. Boys are usually about two years older than girls when maturity arrives. This age also varies a great deal among individuals. And, finally, physical and emotional development do not always proceed at the same pace.

All of this means that, almost inevitably, some young people will be out of step. They will be attracted to members of the opposite sex which the crowd still scorns; or they will prefer members of their own sex while their friends have gone on to dating and flirting. This is disconcerting to them. Not wanting to be on the outside, these young people will try hard to be like the majority. They will rush through, or even miss, an important phase of their emotional development; or they will be forced to remain in it too long.

Even more difficult are those situations in which companionship, when it is most needed, is impossible, and the child becomes an outsider due to isolation. This is no longer as common a situation as it was before modern transportation—and the good sense of the older people in the community—worked out means for young people in rural areas to get together not only during school but after school hours. However, it still exists. And don't forget that young people can also be cruelly isolated by the barriers of race, creed, color, or social position. Parents who exclude their own, or other children, for such reasons are being extremely short-sighted. Social contact is practically essential during this period, and by depriving children of companionship parents are, in effect, increasing the possibility that they will not be able to achieve independence or solve their sex problems. Obviously, this is dangerous not only to the individual child but to the community.

Achieving an equilibrium regarding sex is often no more difficult for a young person than it is to acquire a sense of balance regarding independence. At this point young people usually sum it up by saying, "Parents are the greatest problem of adolescence." In a way, this is true. Even under the best circumstances, a child seldom finds it easy to acquire a new attitude toward the man and woman he has probably regarded only as "father" and "mother" and who now must become people as well as parents to him. No wonder the adolescent swings back and forth between two extremes, which is as painful to him as it is to his parents!

PROBLEMS OF PARENTS

Meanwhile, parents are suddenly forced to face the fact that the child is becoming an adult. This means independence—possibly leaving home for school, a job, or marriage. Particularly in small families, parents can be overwhelmed by the prospect of the loneliness they see ahead of them. How tempting it is to try to prevent the child from becoming really adult (“growing up too fast” may be the way they put it) in the hope that he or she will stay at home! It isn’t easy for anyone to face the fact that middle age is here, as evidenced by the fact that the children are becoming mature, and soon there may even be grandchildren! Nor is it easy to pass the reins into another’s hands, gracefully, and at just the right time.

Even the most mature and realistic parents face problems during this period. They know their help is still needed; their children, however intelligent and well-balanced, lack experience. Every day parents read about in the newspapers, or hear about from their acquaintances, a tragic accident to a teen-ager, the ruined health of another, a marriage of necessity—even cases of homosexuality, rape, insanity! No wonder parents can’t sit back and let their children court disaster. Yet if they exert authority, it may only cause rebellion. How much should they tell their children? Long ago, they told them the facts of life, of *normal* life and its reproduction. But how much should they tell them of life’s uglier aspects now? Then, too, as a very sensible mother said to me ruefully, “Unfortunately, children don’t mature in a family vacuum. Other things keep right on happening. The baby gets sick, the grandparents need attention, Dad has to change his job. Everything seems to happen just when you know you should give your calmest consideration to this teen-ager who has become a will-o’-the-wisp and slips through your fingers just when you want to do your best.”

Yes, there will always be problems and emotional stresses for both parents and children during this period. But let’s not make the mistake of exaggerating them. Let’s do the best we can, knowing that time and nature, which create these problems, will help to solve a great many of them.

THE HEALTH OF ADOLESCENTS

All these problems, which I shall discuss as I go along, will be far easier to handle if the adolescent has a healthy and well-nourished body. That is why nutrition is more important than ever. The body needs a particularly good and complete diet during this period of active growth

and strenuous activity. The food must be rich in protein to make new muscles and body tissue; it must contain plenty of minerals for the growth of bones; it must have vitamins for general health; and there must be ample energy-rich food to keep the fires going.

THE RIGHT FOODS FOR ADOLESCENTS

As I explain in Chapter 2, page 32, *protein* foods include meat, fish, eggs, and milk. They are expensive, but they are essential for growth. Two good sources of protein should be served at every meal. For example, an egg and a large glass of milk for breakfast, or bacon or a slice of ham instead of the egg. At the noonday meal, there should be meat, or fish, or a cheese dish plus a large glass of milk. And at the evening meal the main course should consist of fish, meat, eggs, or cheese, with another glass of milk. Between meals, milk should be taken to make a total of six glasses a day.

I emphasize milk because it not only supplies protein but is the best source of the *minerals*, calcium and phosphorus, which are essential for building bones. If adolescents won't drink enough milk, it can be provided in other ways, such as in soups and deserts. It can be flavored with vanilla or chocolate. Skimmed milk (fat-free milk) is better for adolescents who are overweight as it provides the valuable protein and minerals without the weight-adding fats.

Vitamins should be provided by serving fruits and vegetables; both green and yellow vegetables should be included. Liver, which is an excellent source of all the vitamin B group, should be eaten once a week. A daily addition of vitamin A and vitamin D is helpful during this period of active growth. Some margarine is fortified with vitamin A, and some milk with vitamin D. I often recommend that adolescents supplement their diets by taking one or two U.S.P. multivitamin capsules a day. Ask your doctor about this.

Extra *iron* is needed to build rich red blood for growing young people. Girls who are beginning to menstruate may require additional iron to replace that which is lost in the menstrual blood. The following foods are rich in iron. Your doctor can also prescribe supplements of iron in capsule form if necessary.

Foods Rich in Iron

Lean meat, especially liver, heart, kidneys
 Leafy green vegetables
 Egg yolk
 Whole grain and enriched bread and cereal
 Potatoes

Oysters

Dried fruits, peas, and beans

Carbohydrates: Plenty of bread and starches are also required to maintain or gain weight.

Mothers will recognize this diet suggested for adolescents as containing many of the things they were advised to eat during pregnancy. The extra proteins, minerals, and vitamins are needed for the growing adolescent just as they are for the growing fetus. The main difference between the diets is this: the adolescent needs plenty of supplementary carbohydrate and fat to provide energy for his active life, whereas during pregnancy the mother's weight gain should be kept under control.

Please read my chapter on *The Food You Eat*, page 23. Note how to find inexpensive sources of protein, calcium, and iron if you cannot afford a diet rich in meat, eggs, and fresh milk. But do make every effort to provide these needed foods, even at a sacrifice of money that would otherwise be spent on other items in your budget. It is extremely difficult, sometimes impossible, to correct an injury to growth.

OVERWEIGHT AND UNDERWEIGHT

From a physical standpoint, being underweight during adolescence is far more serious than is being overweight. The underweight girl or boy has less resistance to contagious diseases, especially tuberculosis which so often strikes during this period (see page 638). Young people who are too thin are apt to have emotional difficulties, too. Their friends may make fun of them, or they may lack the energy to keep up with the crowd, perhaps forcing themselves to keep going "on their nerves." However, overweight girls and boys usually suffer more acutely from being teased and left out because they are unattractive. This may cause them to eat in order to console themselves, creating a vicious circle that is hard to break.

Getting young people to gain or to lose weight requires the tact of a diplomat. Here, as in so many other situations involving adolescents, each parent has to consider the individual child. However, I can make several general suggestions—which, incidentally, apply not only to matters of health but to many other situations in which the parent must exert authority.

1. Never use ridicule, or let other members of the family use it if you can possibly prevent them. Ridicule is always cruel, and as adolescents are particularly sensitive, it affects them even more than it does adults.
2. Don't nag. This defeats its own purpose, especially with adolescents, who are usually impatient.

TABLE 16
IDEAL WEIGHT IN BOYS AND GIRLS*

<i>Height Inches</i>	BOYS					
	<i>14</i>	<i>15</i>	<i>Age 16</i>	<i>17</i>	<i>18</i>	<i>19</i>
54	72					
55	74					
56	78	80				
57	83	83				
58	86	87				
59	90	90	90			
60	94	95	96			
61	99	100	103	106		
62	103	104	107	111	116	
63	108	110	113	118	123	127
64	113	115	117	121	126	130
65	118	120	122	127	131	134
66	122	125	128	132	136	139
67	128	130	134	136	139	142
68	134	134	137	141	143	147
69	137	139	143	146	149	152
70	143	144	145	148	151	155
71	148	150	151	152	154	159
72		153	155	156	158	163
73		157	160	162	164	167
74		160	164	168	170	171

GIRLS					
55	78				
56	83				
57	88	92			
58	93	96	101		
59	96	100	103	104	
60	101	105	108	109	111
61	105	108	112	113	116
62	109	113	115	117	118
63	112	116	117	119	120
64	117	119	120	122	123
65	121	122	123	125	126
66	124	124	125	128	130
67	130	131	133	133	135
68	133	135	136	138	138
69	135	137	138	140	142
70	136	138	140	142	144
71	138	140	142	144	145

*Taken from American Child Health Association.

3. Give the problem serious attention, with special consideration for the particular person involved. Remember that adolescents are individuals. For example, if your child needs to gain or lose weight, consider thoughtfully which of the hints I offer in Chapter 3 (Underweight and Overweight, page 41), will work best on him or her.

4. Fall back on an authority your child will recognize. Young people are inclined to think their parents know less than they do—just as they were inclined, when they were children, to think that their parents knew everything. Therefore the word of a doctor or health authority is useful reinforcement.

5. Many adolescents, for all their rebelliousness, accept something that is calmly and firmly presented. They respond to a certain amount of authority, to “this is how it is.” So save your authority for the things that are really important.

SKIN TROUBLES DURING ADOLESCENCE

As I explain on page 154, adolescents are very apt to develop pimples, acne, boils, and other skin troubles. Be sure to read the section on *acne*, and note especially that this condition can cause problems that are more than skin-deep!

Always consult a doctor if an adolescent suffers from severe acne. He may want to refer the young person to a dermatologist (skin specialist) or the skin disease department of the nearest medical center or hospital.

Frequent *boils* may be a sign of *diabetes*. Don't forget that this disease, which you may have associated only with adults, frequently strikes young people, including those who are not overweight. In any event, a *carbuncle* or recurrent boils are sufficient cause to consult a physician. (See page 158.)

Freckles can be a source of worry to young people. (See page 152.) Let me remind you again that there is no way you can remove them safely at home. However, they can be prevented from getting worse by reducing exposure to the sun, or by wearing protective ointments or lotions. Mothers can be helpful, when freckles are really unsightly, by providing a disguise in the form of face powder or “Covermark.” Very disfiguring cases should be referred to a specialist in skin diseases who may try “peeling” therapy. Be sure to cheer up a freckler by pointing out the fact that these spots usually fade with the passing years. And, again, don't permit freckles to be made a target for family jokes.

AWKWARDNESS

Many young people cannot seem to handle their rapidly growing bodies. Their clumsiness is not due merely to carelessness or willfulness, as some parents seem to believe. Helping them to understand their problem, instead of complaining about it, prevents them from becoming self-conscious, which only adds to the awkwardness.

SPECIAL PROBLEMS OF GIRLS**BREASTS**

Some adolescent girls feel shy or even ashamed of their breast development. They may try to walk with their shoulders hunched over to conceal their bosoms. Mothers should encourage them to be proud of their developing womanhood. They can also be helpful in choosing clothes suitable to the girl's new figure, always making allowance for the fact that the girl's preferences are important.

Mothers should not only emphasize the fact that breast development is a normal part of puberty, but should explain that, shortly before or during menstruation, some tenderness and swelling is apt to occur, and should cause no concern.

I describe the structure of the breasts and problems connected with their size and shape on page 777.

BODY HAIR

The adolescent girl may develop an excess of hair over the thighs and legs or under the arms. Facial hair sometimes becomes disfiguring. Parents should take this seriously because it can be very important to a sensitive young girl. Bleaching is usually enough to keep this hair from being prominent. If neither this nor shaving seems satisfactory for unsightly facial hair, your daughter may want to have it permanently removed. This can be dangerous if it is attempted by anyone but an expert. Read my discussion of excess body hair on page 150. If an expert is not available or is too expensive, exert all your tact to convince your daughter that she should wait rather than risk infection and scars.

MENSTRUATION

Menstruation may precede, accompany, or follow the outward signs of a girl's maturity. It usually begins at twelve to fourteen years of age,

but it may start as early as ten or as late as eighteen. Maturing early or late often runs in a family. However, if a girl's menstrual periods begin at ten or earlier, or if they have not started by the time she is seventeen, a doctor should be consulted. A doctor should also be consulted if the characteristic changes of puberty—the development of the breasts, pubic hair, and so on—occur unusually early or late. This may be due to a disorder of the endocrine glands which can be corrected, and the child usually needs help with the emotional problems that are apt to arise under such circumstances. In the average woman, menstruation occurs every 28 days, but the cycle varies a great deal in different women. However, each woman has a fairly definite cycle, which should be reasonably well established by the end of the first year after the onset of menstruation, or the *menarche* as this is called.

Menstruation is a normal physiological event which I describe in detail on page 98. Be sure to read that section, and also the sections on page 761 in which I discuss past attitudes toward menstruation, and the various menstrual disorders. This information is essential to women of all ages. Here, I shall stress some facts about menstruation in relation to the adolescent.

Many people, either consciously or unconsciously, regard menstruation as an illness, and instill fears about it into young girls. In other instances, girls reach puberty without knowing there is such a thing, so that their first menstrual period is a severe emotional shock. All girls, and boys as well, should be told about menstruation before they and their friends reach the age of puberty—preferably by their mothers.

It is not easy to say exactly how early children should be told about menstruation. As I explain on page 397, parents should not give children information which they cannot understand, or in which they are not interested. But on the other hand, children should not get the impression that menstruation is, as they often put it, "a dirty secret" which has been kept from them. The opportunities for privacy, the possibility of the child's learning about menstruation in other ways, and similar factors must help determine the age at which each child should be told about menstruation. The important thing is the mother's attitude.

Mothers should realize that menstruation is not a sickness, and it is not something to be ashamed of. It should not be called "the curse" or made to seem mysterious or shameful. Mothers should explain to their adolescent daughters that many women experience some discomfort or "cramps" in the lower abdomen, usually at the onset of a period, and that menstruation may be a "nuisance" for the first day or days, especially if the flow is profuse. However, it should cause no real difficulty. Girls should be able to go to school, take walks, dance, play ordinary games, and, if the weather is warm and the flow not profuse, go swim-

ming. If a girl tires or chills easily, she should avoid swimming and the more strenuous sports during her menstrual period. She should not be goaded into overdoing things by a mother who is overly anxious to emphasize the fact that menstruation is normal. Girls should be told that menstrual disorders do occur, but that they are usually of a minor nature, and that a doctor can almost always cure them, or at least help them a great deal.

Pad versus tampon. Either is safe from a health standpoint. The choice depends on the individual. If the flow is profuse, pads may be required to absorb it. Most virgins can use the small-size tampons, and mothers should not imply that a girl who uses a tampon is not "nice."

FEMININE HYGIENE

Aside from ordinary washing and bathing, no "feminine hygiene" is necessary. Baths or showers may be taken during menstruation, although extremely hot or cold ones should be avoided. Women who prefer not to bathe during their periods should wash the outer genital parts with warm water and soap at least once or twice a day.

If strong odors persist, or if there is a discharge from the vaginal passage between periods, be sure to see a doctor or consult a hospital clinic. These discharges and odors usually result from an infection which should be attended to. *Douching* is seldom necessary (see page 128). Ask your doctor about it if you think that you need vaginal douches.

SPECIAL PROBLEMS OF BOYS

Boys arrive at puberty about two years later than do girls—that is, between the ages of fourteen and sixteen on an average, although some boys mature as early as twelve and others as late as twenty. If a boy matures at an exceptionally early age, a doctor should be consulted. I think it is particularly important to consult a doctor in the case of a boy who matures *late*. Boys are apt to be concerned about their virility if they mature late; girls are less concerned if their first periods have not arrived. There may be a glandular difficulty (see page 96) which requires treatment; but even if nothing is wrong, a doctor's reassurance may be necessary to prevent emotional problems.

Boys grow rapidly during this period, and their appetites may be enormous. Hair appears on the face and the pubic regions, the genitals are enlarged, and the boy is able to have erections and ejaculations. Nocturnal emissions ("wet dreams") start in this period.

NOCTURNAL EMISSIONS

This is nature's way of announcing the fact that a boy can become a father. It is nature's way of relieving sexual tension.

The fluid containing *spermatozoa*, stored in the *seminal vesicles*, is discharged at night, usually accompanied by a sexual dream. This physiological event should not be, as it so often is, a cause for shame, pride, or concern. It is a natural part of adolescence, about which boys should be informed in advance. Parents should not comment upon finding seminal stains on the bedclothes or pajamas. I think it is important that girls, too, be told about nocturnal emissions so they will not be shocked by discovering their existence accidentally, or through someone who misinforms them.

MASTURBATION

Of course this is a problem for members of both sexes, although it is usually regarded as a special one where boys are concerned. I speak of it as a problem; it is one in the sense that almost every individual has been confronted with the desire to masturbate, and must work out his or her own solution to this question. It is a problem in the sense that sexual desire is not purely physical. That is, the physical aspects are, normally, closely associated with the desire for intimacy with a member of the opposite sex. This intimacy cannot exist during masturbation, except in the form of fantasy.

These are the only real problems of masturbation. The other problems have been conjured up out of whole cloth. Although they are not real, they have caused countless heartaches and even tragedies. The twin specters we have created are the devils of fear and of guilt.

Fear is unnecessary because masturbation is not harmful. *It never causes organic or mental sickness.* Guilt is unnecessary because a very large percentage of boys and girls have practiced some form of masturbation during their growing years and often into adult life. Fear and guilt cause emotional difficulties that can injure the whole future of a boy or girl. Don't inflict them on your children in order to prevent the "evils" of masturbation; there are no such evils, and you couldn't prevent them if there were.

If a boy or girl becomes addicted to masturbation, practicing it—let us say—daily, the problem is an emotional one which should be discussed with a doctor or counselor (see page 251). The masturbation is a sign, not a cause, of the emotional difficulty.

HOMOSEXUAL PRACTICES

Many boys and some girls indulge in some form of homosexual "play" with a companion or companions. Here the parents should be on the alert. Usually such practices are harmless and cease as the boy or girl matures. However, it is at this time that a real homosexual may exert an unfortunate influence. If such a situation has arisen, the parents may need a great deal of skill and tact; in many cases they would be wise to discuss the situation with a trained person.

Such situations are less apt to arise if boys and girls know the facts about homosexuality. Most young people pick up some information on this subject. Often they pick up misinformation. This may cause them to worry needlessly about whether they themselves are "queer," or it may make a homosexual seem sophisticated and wicked—hence fascinating. Understanding what homosexuality actually is will serve as a protection for healthy adolescents.

I think every young person should know that a preference for the members of one's own sex is natural in late childhood or early adolescence, and that it may overlap—but only for a short time—the development of attraction to the opposite sex. The normal adolescent then grows up emotionally, finding the opposite sex attractive. A man or woman who has not progressed in this way can be regarded as emotionally retarded, immature, or ill—however brilliant intellectually he or she may be.

I do not mean that you should give your children a lecture on this subject. It is far better to make the points as the opportunities present themselves. I realize that some parents find it difficult to do this. Are you one of them? Do you feel awkward or embarrassed about discussing masturbation, nocturnal emissions, or any other subject with your children? Does your own strict early training make you act as though you thought some things were wicked when you know they really aren't? If you have any doubts, check the matter with your doctor, a marriage counselor or someone in the field of child guidance. Such a discussion will either increase your confidence, or make you decide to let the doctor or some other trained person discuss these matters with your children.

A GOOD SEX LIFE FOR OUR CHILDREN

It is likely that no direct suggestions we parents offer will greatly influence what our children do about sex. However, our pattern of living, our maturity, our own example of love in the home will undoubtedly influence our children's attitudes toward sex. I think that we parents

should stand in the background, unobtrusively observing the way our children are developing so that we can, if necessary, help them so far as their attitudes and reactions are concerned.

By all means make the home a welcome, attractive place for your children's friends. By giving them freedom and privacy in and around the home, you will help them work out their normal sex urges. By restrictions and suspicions, you will simply drive them into secretive relationships which frequently end in disaster.

If your son or daughter is getting friendly with someone who is too old or too sophisticated or not the right type, don't step in and order him or her to terminate the friendship. Cultivate the friend with invitations to dinner or a family picnic. Then when you raise questions with your child about the friendship, he or she will realize that you talk from knowledge—and are not just “sounding off.”

The undue influence which another person may exert on your child is best combated indirectly. If you stop to think about it, you will realize that we usually let other people do our thinking for us only when we ourselves feel insecure—when we lack information, or the stress is too great for us to cope with. Doesn't that indicate pretty clearly the line you should follow in protecting your child against being misled?

No one knows the complete answer to the difficult question about petting and sex relations for the adolescent. It depends to a great extent on the religious and cultural background of the family and the maturity and personality of the individual. My attitude is very much the same as that of the psychiatrist, Dr. John Levy, as given in that fine book, *The Happy Family* (by John Levy, M.D., and Ruth Monroe, Ph.D.). He says,

Advising adolescents about their sex life is a highly personal and individualized problem. You cannot recommend the same behaviour for all of them indiscriminately. I rather hope that my own daughter will pet or neck, or whatever the proper term may be, preferably with boys she knows well and likes, and only with her contemporaries. Love-making of this type is a healthy preparation for marriage. I hope that she will not have intercourse or end up merely a technical virgin. Quite aside from any moral implications, such a step is risky, as I have indicated above. If she does have a complete relationship, though, I most earnestly hope that she will know what she is about, that she will not go into an affair because she happens to be tight, or thinks it's “the thing,” or wants to prove that she can carry it off. These are my hopes. They are based on my observation of the kind of behaviour least likely to cause trouble in our particular social group. But she may order her life quite differently and be none the worse for it. If she is neither afraid of sex or bamboozled by its glamour I shall be very content.

Note particularly the points Dr. Levy makes, which apply equally well to boys as to girls: (1) Adolescent lovemaking should be with friends who are approximately the same age. (2) A certain amount of petting and necking is a good thing as a preparation for the fuller, richer love of marriage. (3) If the young person prefers some other way, accept the decision with the hope that it will be a realistic one and will not cause unhappiness.

We parents should be close enough to our children so that they will know intuitively that they can turn to us for honest, sympathetic guidance and assistance, in case a catastrophe should occur—even one resulting in pregnancy or a venereal disease. If all young people could feel this way about parents—and their family doctors—how many tragedies could be avoided!

HOW PARENTS CAN HELP THE ADOLESCENT

To help the adolescent, we must first learn what we cannot do. There is no way of curbing the upsurge of growth and emotions and aggressions that characterize the period of puberty. One can't stop the tide. Trying to dam it will only result in intolerable pressures. However, it is possible to guide the tide into such channels that it won't wash away valuable structures.

If we are wise and learn to accept the strange new behavior of the adolescent, we will set the basis for a happy home life for the entire family. Parents who learn to "take it" from the difficult, aggressive adolescent will be rewarded in later years by love, respect, and help from the son or daughter who has been able to grow into adult life without being fought against. Parents who show sympathetic understanding for the shy, sensitive adolescent will be rewarded by the love of a mature man or woman who has been encouraged to grow up and achieve independence.

We parents should try to remember our own reactions and desires in adolescence. Recalling our own strange behavior will make us more tolerant of our children. If we remember how we hated the authority of our parents, we will understand why our children object to strict rules at home. If we remember our fantasies and daydreams and grandiose plans, we will listen with tolerance, rather than contempt and derision, when our children plan to remake the world, or become poets, missionaries, or explorers when we think they should long ago have decided to enter the family business. And we must realize, too, that our children may be quite unlike us: their adolescence may be stormy while ours was quietly miserable, or vice versa. *If we think of the adolescent as half*

child and half adult, we can more easily weather the storms and be gentle and firm rather than threatening and authoritarian.

We adults can learn something very valuable from adolescents. Dr. Benjamin Weininger, the psychiatrist, points out that adolescents frequently have the correct attitude toward living. They are idealistic, intense about life, and hopeful that they can participate in making life better for everyone. The adolescent may not be very practical in his attempts to reach his ideals. But his way of life is worth our consideration and respect.

Our job is to help the adolescent child reach the goal of *maturity*. It is a double goal of sexual maturity and social maturity. We have already talked about how to help the child reach sexual maturity. There are a number of things we can do to help in the attainment of social maturity. Here are some practical measures:

Let the child feel he has a place in the family. Discuss or at least explain family decisions.

Give him or her the details of the family budget. Present a true picture of what things cost in terms of the parents' outlay of time and energy. Let him see that his share is a reasonable one, and not the result of an arbitrary decision.

Encourage a sense of adult responsibility about money. Give the child a regular allowance, once a week for younger children, once a month for those sixteen or over. If it is possible, provide older children with a personal checking account, which makes them realize that they are being treated as responsible individuals.

Do everything you possibly can to enable an adolescent boy or girl (or one who is approaching adolescence) to have friends. Don't be too strict about insisting that these acquaintances be desirable. A child who has previously been well-adjusted is in less danger from "bad" companions during adolescence than he is from being kept apart from his contemporaries.

Give the adolescent a chance to leave home. If you can afford it, arrange for longer and longer visits during school vacations. Younger children can first go to camp or to visit relatives. Then let them go to visit friends. Older and more mature ones should be permitted to take jobs away from home during summer vacations. These breaks from home life give the adolescent valuable training in self-confidence. They also help reduce the tensions that adolescents generate in their rebellion against home rules and restrictions. The adolescent soon learns that there are rules to be followed anywhere he goes!

Encourage the adolescent to take his place in the adult world. For example, allow a fourteen-year-old girl or boy to drive the family car out of the garage each morning and back into the garage at night. It is

against the law in most states for them to drive on the street. But they appreciate the opportunity to tell their friends that they are "driving," and that their families consider them sufficiently competent to give them a task involving the car.

Let the child decide on his or her career. Show your appreciation of its importance by trying to get expert guidance for him or her. In some cities you will find specialists trained to help people find the careers for which they are best suited, as I describe on page 186. Discuss your child's aptitudes with the high-school teachers. You can also help by inviting into your home friends and acquaintances who will describe their own careers in the professions, arts, or business.

If your daughter wants to enter a profession rather than marry at the same age that her mother did, let her work it out in her own way. Don't add to the social pressure that often makes a girl marry before she is ready for it. Many girls are by no means fitted for marriage simply because they are physically mature. A girl who is shy or feels inadequate won't find her problems solved by marriage—which doesn't solve emotional problems and may only add to them. Similarly, if your son is willing to give up a lucrative family business for the lesser financial return of teaching, let him follow his own interests. If he comes back to your way of life later, it will be from a realistic desire and not with a burning resentment at having been forced into something.

Help your children learn to know you as individuals, not just as parents—as human beings who may make mistakes but who want to do the best they can for their children because they love them. Of course it is better to show your love than it is to talk about it.

One way you can show your love is by remembering that the *growing egos of adolescents need psychological nourishment as much as their growing bodies need food*. But be careful not to praise your children for qualities they don't possess. They will either suspect you of being insincere, or think you believe that they are better than they are, which will make them feel inadequate and insecure. Surely you can find plenty of good things you can truthfully say about your children! Just let them know that you appreciate them as they are and for what they are.

As the poet Carl Sandburg so beautifully expressed it in *The People*, Yes:

A father sees a son nearing manhood.
What shall he tell that son? . . .

Tell him too much money has killed men
and left them dead years before burial . . .

Tell him time as a stuff can be wasted.
 Tell him to be a fool every so often
 and to have no shame over having been a fool
 yet learning something out of every folly . . .

Tell him to be alone often and get at himself
 and above all tell himself no lies about himself . . .

Tell him to be different from other people
 if it comes natural and easy being different.
 Let him have lazy days seeking his deeper motives.
 Let him seek deep for where he is a born natural.*

* From *The People, Yes* by Carl Sandburg, copyright, 1936, by Harcourt, Brace and Company, Inc.

Housing and Your Health

I CANNOT SAY there is *direct* proof that housing will affect your health or that of your family. There is no doubt about the effect of housing on the number of accidents in and around the home. But the evidence is less direct when it comes to such illnesses as tuberculosis, pneumonia, colds, rheumatic fever, and other infectious diseases. It is true that these diseases exist in greater numbers in areas where housing is of poor quality. However, as you would expect, wherever housing is inadequate there is less money available for adequate diets, warm clothing, and the other essentials of good health; and, also, medical care is obtained less frequently.

Therefore, it becomes difficult for a doctor to say *how much of a factor* housing has been when, for example, a case of tuberculosis occurs in a situation in which housing is inadequate. I would like simply to give my readers my recommendations on the subject of health and housing, and hope that you will consider them seriously. I truly believe that if your house or apartment fulfils these suggestions, you will have a greater chance of preventing sickness and injuries. Even if you have the most luxurious home, please read the section on the prevention of accidents in the home, because no home is free of hazards that can affect both adults and children.

THE MINIMUM REQUIREMENTS OF GOOD HOUSING

1. *Enough rooms for the family.* A kitchen, bathroom, dining room, parlor or living room, and bedrooms: these are basic requirements for every family. Small families may combine the dining room and the kitchen or parlor. The number of sleeping rooms is highly important. *No child should sleep in the same room with grown people.* Ideally each child should have his own room, but two young children of nearly the same age can share a room. If the children are widely separated in years, especially when they are of a different sex, or if children and parents are

crowded into the same sleeping quarters, poor physical and mental health will very likely be the final result.

Children need space and privacy in the home. Too often this is overlooked. The child who has his own space for play doesn't get in the way of the adults. The child and parents are happier and more relaxed. The child develops initiative and independence at his *play*. That is the child's method of learning how to develop his brain and his muscles. He needs *undisturbed play*, and plenty of space for his blocks and toys.

Outdoor space is also necessary for children. The parents who select their houses near parks and playgrounds will be rewarded by the increased happiness of their children.

2. *Well-heated rooms, always free from dampness.*
3. *Enough fresh air and sunshine.*
4. *Screens kept in good order to keep out flies and mosquitoes. Screen doors that close tightly.*
5. *An inside bath and toilet; plumbing, stove, furnace, and refrigerator, all in good repair.*
6. *Roofs, ceilings, walls, and windows which are rain-proof.*
7. *Rat-proofing, especially in southern states where typhus exists.*

All of these requirements for good housing may seem completely beyond the average income. But many or all of them can be achieved by individual and cooperative effort if the desire is strong enough. The extra cost in money and effort will pay rich dividends in physical and mental health.

In the first place, remember that doctors and health officers would like every family to have adequate, healthful housing. How and when this will be achieved depends on the desires of our citizens to overcome the shortage of first-class housing. That part of Housing and Health is beyond the scope of this book. In the meantime, there is the immediate problem facing us of selecting the best possible home for *your* family.

WHERE TO LIVE

Select your living quarters primarily for health reasons. The proper choice requires your taking a broad view of the problem. The needs of each member of the family should be considered. A worker in city industry should consider living some distance away from his work if his children need more room than he can afford close to his work. Naturally, there is a limit to the demands on time and energy that can or should be made of the parent. But it is important that all possible factors be considered.

How much should a family spend for rent? This depends on your income, and varies from averages of 11 per cent for well-to-do families to 33 per cent for the lowest income group. A quarter of the total income used to be suggested as the correct percentage for the average family to pay for housing. I advise families to spend the maximum they can afford to obtain adequately the three essentials: housing; food and milk; medical and hospital insurance.

LOCAL HOUSING INFORMATION

You can obtain expert advice about the housing available in your community by consulting the local or Federal housing authority or council. Most large cities have one or more such organizations which provide free information.

In smaller communities or rural areas the choice of housing involves the added problems of health dangers which one may find in the country. It may be difficult to obtain pure water in rural areas. Water cannot be judged by its appearance. (See page 180.) Only tests conducted by your county or state health officer can tell whether it is safe for your use. In southern states, the house should be located away from malarious swamps and other breeding grounds for mosquitoes.

The householder in the rural districts can obtain useful information from his health officer or the local doctor about the healthfulness of his home or about a new location that he is considering.

In the city, the health department officials should be called when uncorrected health hazards exist. Joint discussions and meetings by tenants in large housing units help bring out health menaces or dangers which can be corrected by mutual cooperation.

PREVENTION OF HOME ACCIDENTS

ACCIDENT HAZARDS IN THE APPROACHES TO THE HOME

A house with poor lighting will cause more accidents than one in which the entrances, staircases, and rooms are properly illuminated. There is always a direct relationship between the state of repair of stairs and railings in a house and the number of sprains or broken bones sustained by persons living there. All such danger spots should be corrected immediately. Lights in hallways and over staircases should be

large enough to illuminate the entire area. Railings should be in sufficiently good repair to prevent children from falling through. Railings should also give adequate handholds for adults, especially the elderly (in whom fractured bones are very serious matters). Loose steps or slippery and worn steps should be repaired or replaced. In cold weather, icy or slippery steps should be scraped and protected, if necessary, by sprinkling with ashes or sand.

If the outside approaches to all homes were made completely safe, thousands of severe sprains and fractures would be prevented each year.

ACCIDENT HAZARDS INSIDE THE HOME

Good light inside the house is essential. The prompt repair of stoves, gas pipes, electric wiring, refrigerators, and electrical appliances is as necessary as the repair of stairs and railings outside the house.

The prevention of health hazards inside the house requires more thought, more alertness, and more *family cooperation* than prevention of accidents at the approaches to the house. Everyone in a family may suffer horrible burns if just one person sets off a fire by carelessness. Each member of the family, including children, must be taught the rules. If the following rules are observed by all, the number of accidents will be reduced to a minimum.

FIRE HAZARDS

1. Do not start fires with kerosene. Use kindling wood.
2. Do not light a gas stove or gas oven if there is a distinct odor of gas. Open a window. If the odor of gas still persists after a few minutes, call a repairman.
3. Never keep coal stoves or gas stoves or gas grates burning in a house unless there are vents or flues to take away the gases that result from combustion. Windows should be partly open to supply fresh air. If it is impossible to arrange a flue, talk the situation over with your health department or your county health officer. With such a heating system, you will need expert advice on how to heat your house without danger. Danger comes from carbon monoxide poisoning from coal or illuminating gas, or suffocation because the oxygen in the air is exhausted by the burning gas or coal.
4. When working near fires, make certain that your hair and clothes cannot come into contact with the flames.
5. Use proper shields to protect oil lamps, gas flames, and fires from drafts, such as caused by open windows. A blown-out gas flame is a

tremendous hazard; it may cause immediate gas poisoning, or may explode from a pilot light or lighted match. Do not leave gas fires burning when you leave the house.

6. Teach children to keep away from fires, not to play with matches, and to keep away from the stoves. Many burns and scalds would be prevented if children were kept out of the kitchen when hot foods were being prepared. An inexpensive gate will prevent many an unfortunate accident. Children's memories are short! It is best to supplement the rules with other safeguards such as gates, keeping matches away from children, and keeping children away from open fires.

7. Be sure you know how to call your fire department.

8. One of the greatest safety devices in the home, especially the kitchen, is a good *fire extinguisher*. Buy one and learn how to use it; also, keep it always in the same place so there will be no delay in finding it.

HAZARDS FROM FALLS INSIDE THE HOME

These can be prevented by the following rules:

1. Cover slippery *floors* with carpets. Anchor small rugs so that they won't slide when walked on. Be sure there are no rips to catch heels in. This is very important with the runners on stairs.

2. Use a rubber mat in the *bathtub* to prevent accidents caused by slipping.

3. Sharp-edged *furniture* should be covered or removed when children are learning how to walk. Low stools and other objects which can trip children or adults should be kept away from passageways.

4. Make electric light switches available for each room so that persons *walking in darkness* from one room to another will be able to light their way. It is frequently desirable for children and elderly people to keep a light on during the night, especially near the bathroom.

5. When children or elderly people use rooms where falls from windows would be dangerous, the lower part of the window should not be opened unless protected by heavy screens or grills. Ventilation can be obtained by opening the upper half of the window.

6. Stairs should be covered with carpeting or rubber safety treads. Also, they should be kept clear of mops, baskets, toys, and other hazards.

EACH ROOM HAS SPECIAL HAZARDS

Fire and falls are the chief dangers, but as everyone knows there are countless other ones to watch for. *Each room* has its special dangers, e.g.:

KITCHEN

Keep sharp knives away from children. Keep lye, ammonia, acids, insect and rodent poisons, and every other caustic or poisonous substance out of children's reach. All of these, especially lye, have killed or seriously injured a great many children.

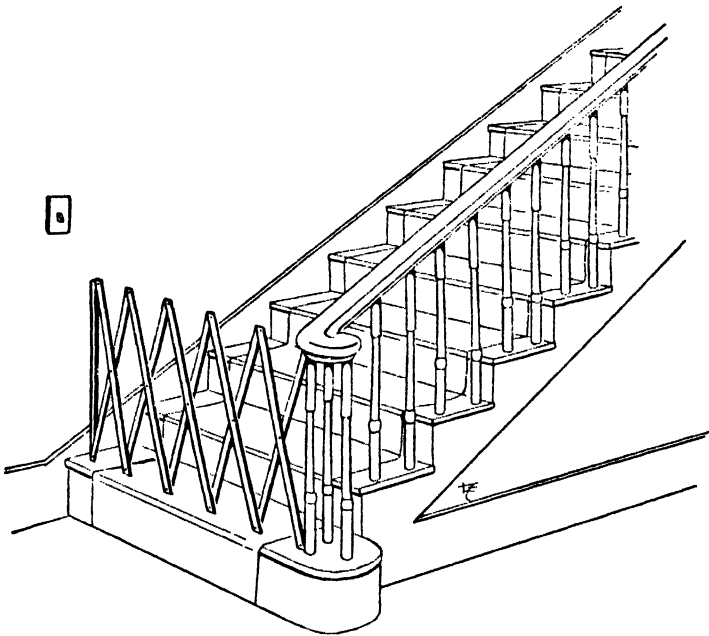
Follow the instructions already given about the danger from gas stoves and hot foods.

Keep the children out of the kitchen except when they are watched.

Adults preparing food in the kitchen need good light to prevent cuts. They need asbestos pads, tongs, and large holders for handling hot pots and pans to prevent burns and scalds.

Hot fat or grease requires special precautions. If it catches fire, *do*

Illustration 22-1. ACCIDENT PREVENTION.



THE STAIRS

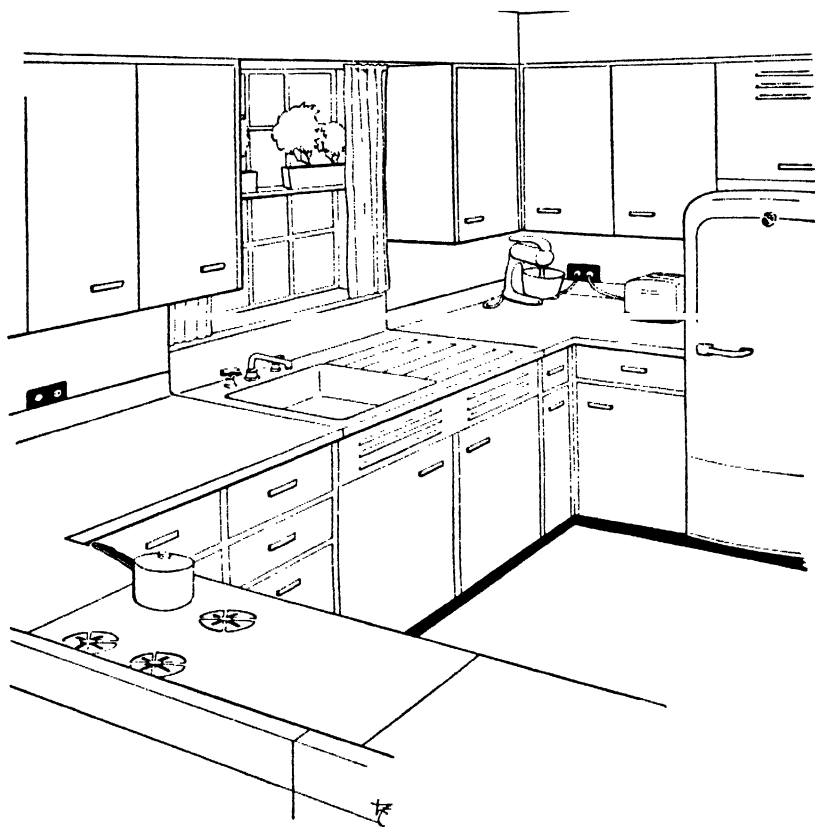
Have adequate light. If dim areas, obstructions, etc., cannot be eliminated, paint them white. Get help when carrying things that block your vision. Have a sturdy handrail and hold onto it. Keep treads in good condition; no loose carpets or scatter rugs to slip on.

Don't leave coats, brooms or other objects on the stairs or railing.

Don't let children play on the stairs. Have gates, top and bottom, for toddlers.

not pour water on it because water will spatter the fire. If you can obtain it, use sand, dirt, or ashes to put the fire out. Small fires can be extinguished by pouring salt on them, or they can be smothered with heavy

Illustration 22-2. ACCIDENT PREVENTION.



THE KITCHEN

In addition to precautions listed for other rooms, be certain to: Turn off stove burners and pilot light and open window if you smell gas. Avoid spontaneous combustion by keeping oily rags in air-tight tin cans only, and do not store papers, etc. Be careful with cleansing materials and other inflammables. Never start a fire with kerosene or gasoline. Stand to one side when lighting gas oven, lifting lid from boiling pot, etc.

Keep children away from stove; turn pot-handles in; use safety-cocks or tighten so children can't turn on gas.

Keep sharp objects, strong or poisonous materials out of child's reach.

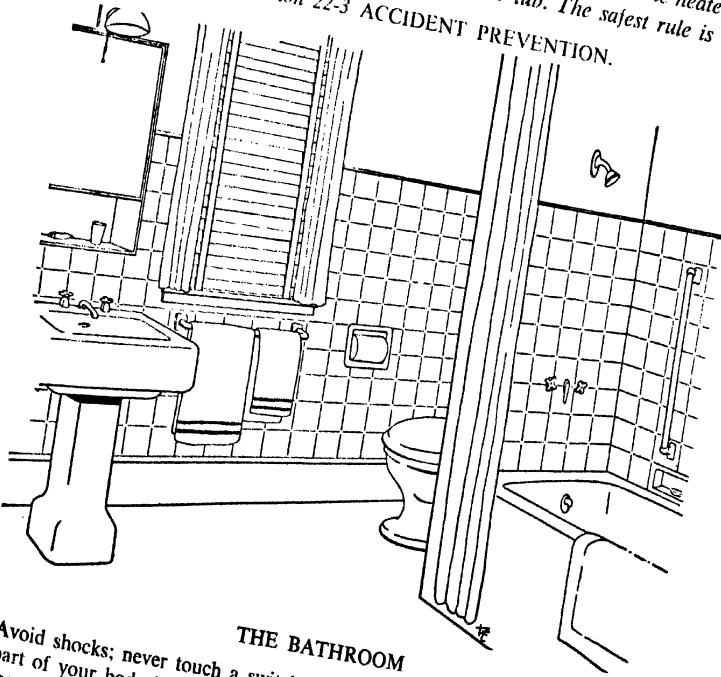
Wipe up spilled water, grease, etc., immediately to prevent slipping.

wet clothes or asbestos pads. If the amount of fat is large and the flames high, pull all inflammable material away and guard against the spread of the fire by pouring water over the places the flames threaten to touch. Have your gas range and electric refrigerator checked once a year. This service is often given free by the gas or electric company.

BATHROOM

Falls in the bathtub or shower are a frequent source of severe accidents. A rubber mat will prevent slipping in the tub. Have good lighting. Soap needs a sturdy holder. Never place electric equipment of any type, especially electric heaters, in the bathroom where they can fall into the tub. The safest rule is to

Illustration 22-3 ACCIDENT PREVENTION.



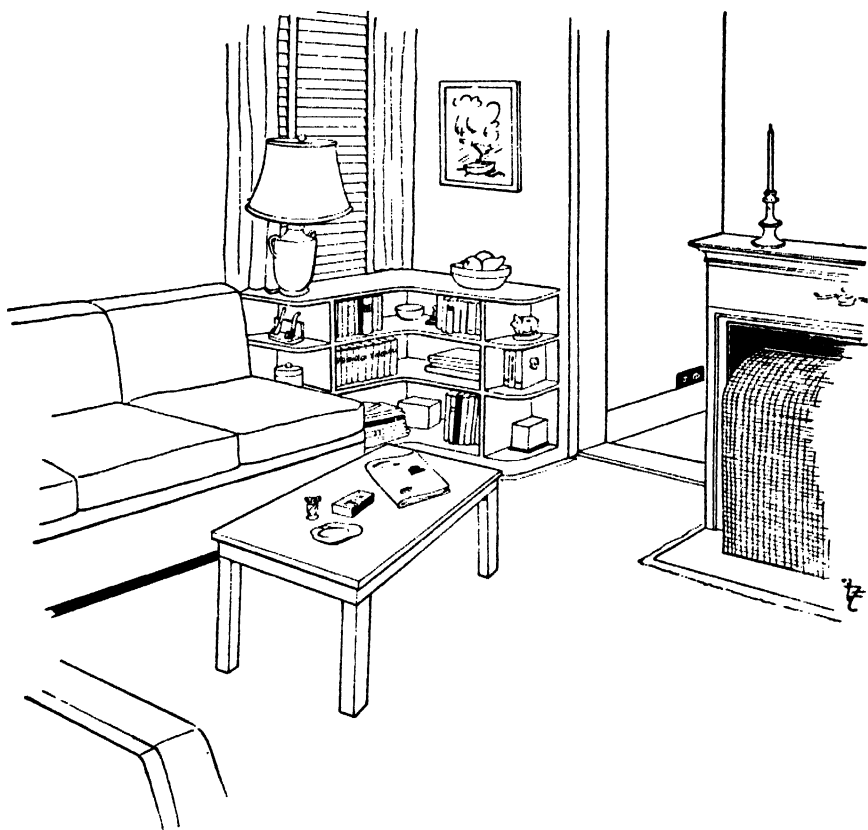
THE BATHROOM

Avoid shocks; never touch a switch, wire or electrical appliance when any part of your body is even damp. Insert an insulating link or tie a string to the end of a chain pull-cord. Be especially careful with electric heaters. Test hot water cautiously to avoid burns. To prevent slipping, keep floor dry, use rubber mat in tub and keep soap in dish. Porcelain faucet handles crack easily; avoid cuts by substituting inexpensive metal ones. Don't leave razor blades around. Keep all medical supplies where children cannot reach them.

warm the bathroom with the electric heater first, then disconnect the heater while the baby or anyone else is in the bathtub. Don't touch an electric socket, switch, or electric appliance while standing in the water. You can be electrocuted by this because water helps electricity flow through your body.

Keep all medicines in a medicine chest out of the reach of children.

Illustration 22-4. ACCIDENT PREVENTION.

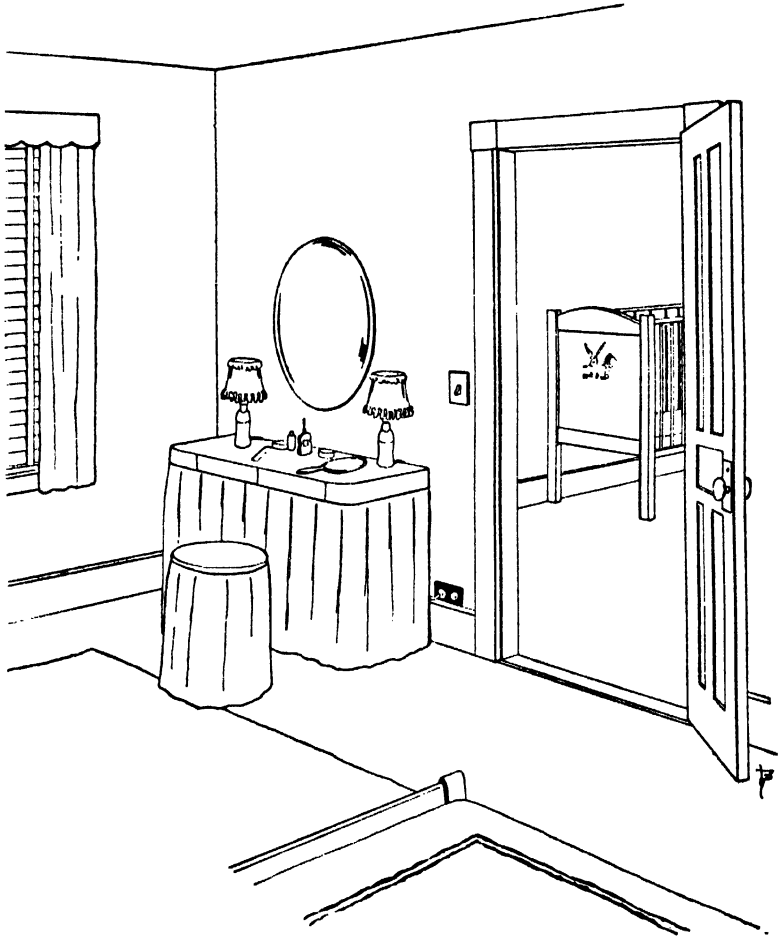


THE LIVING ROOM

Have a screen covering entire fireplace. Fasten window curtains, etc., so they won't blow near fireplace, candles, gas or kerosene lamps. Be careful with cigarettes.

No slippery floors, rugs or carpets (rubber mason-jar rings sewn on under side of rugs will help to anchor them). No long electric light cords to trip over. No open sockets where young children can get at them. Don't overload sockets or tinker with T.V., etc.

Keep furniture in repair; don't use it as a ladder.

Illustration 22-5. ACCIDENT PREVENTION.

THE BEDROOM

Observe precautions with fire and electricity already listed. Also: don't smoke in bed, or sleep with heating pad turned on; put room-heater on a metal mat at a safe distance from walls, bedding, etc.; have window open while gas, oil or coal is burning.

If there are young children, have bars or safety catches on windows; make certain the paint on anything they might chew is not poisonous. Prevent smothering by having baby sleep alone, with light, securely pinned bedclothes, no pillow. Keep objects baby might swallow or hurt himself with out of reach.

CELLAR

Have the furnace checked by a competent repairman before it is started for the winter.

Don't shovel hot ashes into wooden containers. Ashes stay hot for a surprisingly long time and may later start a fire.

When chopping wood, use a good axe and watch where you swing it.

Cellar stairs, as well as the entire cellar, need good lighting. Cellar stairs need railings, too.

Small children should never be permitted to enter the cellar by themselves.

The rules and precautions given here can prevent many burns, broken bones and poisonings. Unfortunately, most of us don't like to think of accidents when all is going well. The easiest way to play safe is to organize a *home safety council* and make it a pleasant occasion and a game for the children. Once a month the family can talk safety rules and discuss any new hazards or accidents which have occurred recently.

In an article that I wrote for *McCall's Magazine* on accident prevention in the home, I suggested that husbands devote themselves to the problem, too. My thought was that men know the technical side of dangerous equipment better than women. Therefore, the man in the family should take the major responsibility for checking the electrical apparatus, the furnace, the gas connections, and similar equipment. The woman could then concentrate on educating the children in accident prevention.

If the children are given prizes for observing the rules, and special ones for new suggestions, plus a treat of ice cream and cake when the home "safety council" meets, they will look forward to the meetings. In this way, their interest in obeying good safety rules and making new ones will be strengthened at an early age.

CHAPTER 23

First Aid

THIS CHAPTER on first aid contains material that may become a life and death matter for you, your family, or a fellow human being. The emergency may be such an acute, sudden one that you will not have time to consult this book. You must have the *knowledge* in advance.

In addition to knowledge, you will be a better first-aider if you also possess *experience* and *judgment*.

Let us consider this specific case: you are camping with friends when a member of the party drops an axe on his wrist and sustains a deep cut with very severe bleeding. You are twenty miles from the nearest telephone, and fifty miles from a doctor. It has become obvious to all of you that a main artery has been severed because the blood is gushing out in spurts; it is bright red. Also, pressure over the wound doesn't stop the bleeding as it will do with severe cuts in veins.

Someone—perhaps you—says a tourniquet must be applied immediately or the injured person will bleed to death.

If you have the knowledge given in Illustration 23-1, page 468, on how to stop bleeding in the arm you will be able to apply pressure with your hand over the right spot to stop the bleeding until the materials are located to make the tourniquet.

The chances are good that with this *knowledge*, you will succeed. But suppose you had previously, as a result of reading my book or attending Red Cross first-aid classes, actually tested the pressure points for stopping artery bleeding. How much more certain you would now be, with this previous *experience*, of success in saving the injured one's life. All you need to do in order to test the pressure points is to feel the pulse in the wrist, then apply pressure or a tourniquet in the upper arm. If you have done it right, you will feel the pulse at the wrist disappear because you have shut off the blood flow through the artery. (Illustration 25-11, page 513, shows how to obtain the pulse.)

To return to our injured person: the bleeding has been stopped with an improvised tourniquet. Now the factor of *judgment* comes into the picture. Should you take him to the hospital fifty miles away, or would it be best to leave him where he is until a doctor can be brought to him some

hours later? Your judgment will tell you that since a major artery has been cut, the doctor will need to sew it up in a hospital operating room. So you will vote in favor of transporting the injured one to the hospital. During the journey, your *knowledge* of first aid will save the injured person's hand from gangrene and subsequent amputation because you will remember to loosen the tourniquet every ten minutes and permit blood to flow for one minute to nourish the tissues of the hand and forearm. Your *judgment* will again be important in preventing emotional shock to the victim by making certain that he cannot see the gush of blood when the tourniquet is loosened.

What have we learned from this story (which, by the way, is based on a real incident, in which a first-aider saved her child's life)? This mother took charge because her husband was away from the camp when the axe was dropped onto her child's wrist. She didn't become panic-stricken and rush off for help which would have arrived after the child had bled to death.

Suppose this mother had not had the knowledge of first aid, and had seen her child die in her presence! Do I need add anything more to convince you that the following sections on "be ready to save a life" must be studied carefully enough so that the knowledge becomes a permanent part of you?

As a minimum I would like you to learn how to handle four situations which may confront you at any time, and in which your prompt application of first aid could save a life.

SEVERE BLEEDING POISONINGS SUFFOCATION AND ASPHYXIA SHOCK

Before going into the details, please learn these basic principles of first aid in serious emergencies:

1. *Never lose your head in an emergency.* This is the time quick, clear thinking and quick action are most needed. A life may depend on prompt treatment. If the sight of severe bleeding makes you too shaky, sit down in a chair for a few seconds, then go on to carry out the necessary first aid.

2. *Summon help.* Call a doctor, the police, or the nearest hospital for all possible serious cases or where there is any doubt. Do this the first chance you get *after* the first aid has been given. Better still, try to get someone to call while you are treating the injured one. If necessary, ask the telephone operator to send help.

BLEEDING AND HEMORRHAGE

A severe cut or wound is dangerous because of the possibility of great blood loss.

The simplest and most effective method to stop bleeding is by direct pressure on the wound with a gauze pad, or, better still, a thick compress of gauze. In an emergency any clean cloth will do. Applying direct pressure on the wound (or *in* the wound if it is very wide) will stop 9 out of 10 cases of bleeding. This is important to know.

Most beginners in first aid learn complicated pressure points and the application of tourniquets. When an emergency arises they may become confused and lose precious time trying to remember complicated procedure.

The simple method of *direct pressure on and around the wound* is the fastest and the most effective.

In applying pressure it is important to keep it constant. Do not keep dabbing at the wound and lifting the gauze every few seconds to see if the bleeding has stopped. This type of treatment irritates the wound and prevents the blood from clotting. It does not give the pressure a fair chance to work properly. The only time pressure should be removed is when the blood has soaked through the gauze completely.

The dressing should be held snugly by hand against the wound for a few minutes. If no blood soaks through then the gauze or cloth should be bound firmly with tape, or next best, strips of cloth.

If the bleeding occurs in an arm or leg, raising the limb very high also helps to control bleeding, as there is less blood in an elevated limb.

Bleeding is different in arteries and veins. Bleeding from a vein comes in a steady flow. The blood is dark in color, almost a bluish red. Blood from an artery comes in spurts, caused by the heart beat, and the color is bright red. In either type of bleeding the best treatment is direct pressure on the wound. Venous bleeding is almost always stopped successfully this way.

Direct pressure does not always stop arterial bleeding, but should be tried first. The next step is pressure by a finger or hand over the nearest pressure point shown in Illustration 23-1, page 468. Another method is the *tourniquet*.

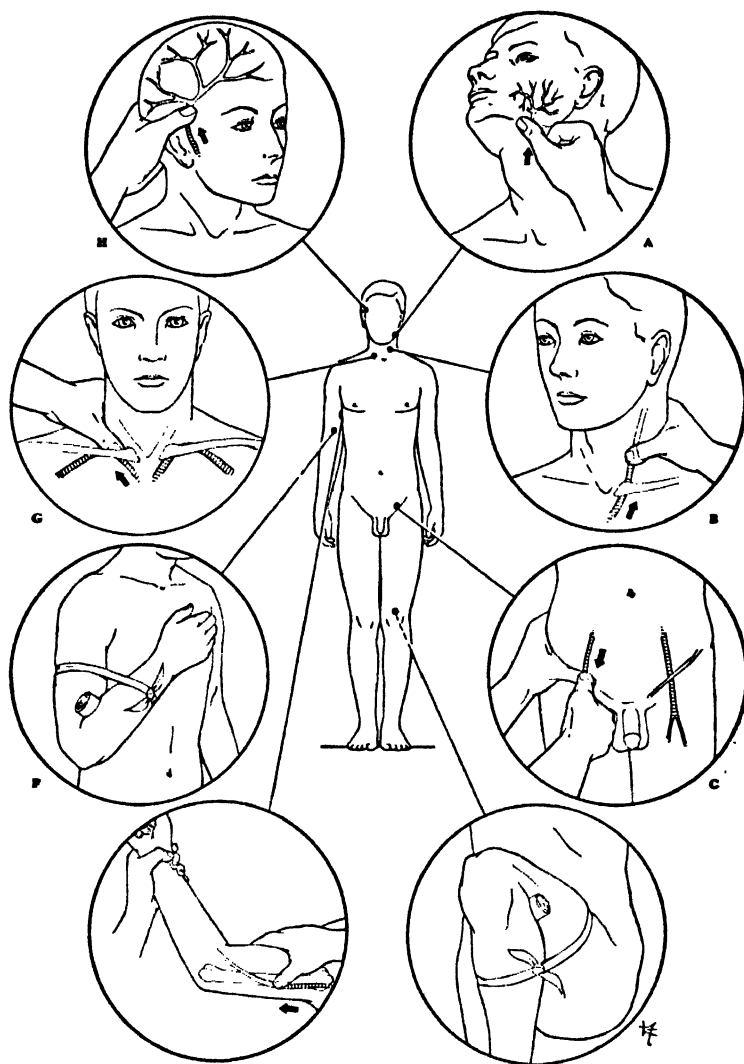


Illustration 23-1. PRESSURE POINTS ON ARTERIES.

The arrows show the direction in which the blood flows through the arteries. Pressure points are located between the wound and the heart. A. For bleeding from face. B. For bleeding from head and face. C. For bleeding from leg. (The inguinal ligament is shown as it passes over the artery.) D. For bleeding from below knee. E. For bleeding from arm. F. For bleeding from below elbow. G. For bleeding from shoulder and entire arm. H. For bleeding from scalp and upper part of head.

APPLYING A TOURNIQUET

The two places to apply a tourniquet are: (a) the width of a hand below the armpit for bleeding from the arm, (b) the width of a hand below the groin for bleeding from the thigh or leg. (See Illustration 23-2.)

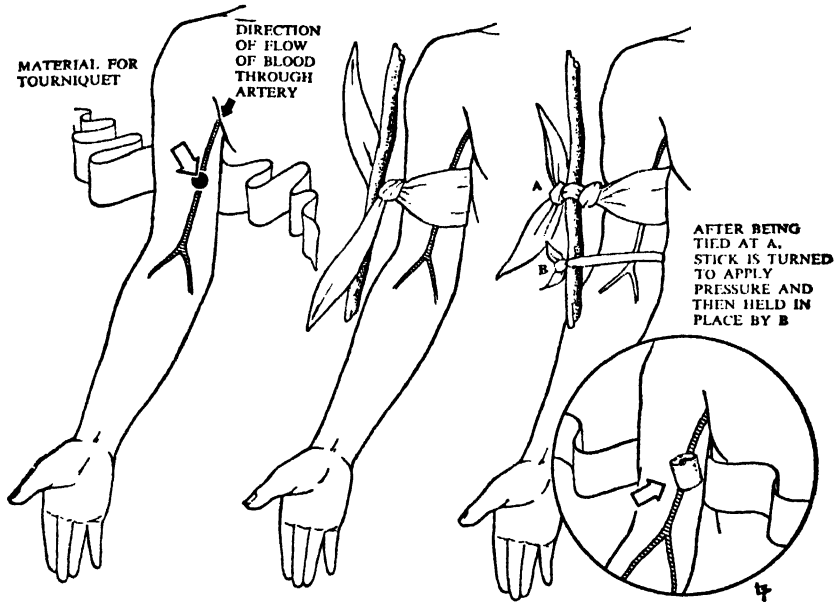


Illustration 23-2. APPLYING THE TOURNIQUET.

Methods of applying a tourniquet, as described in text. Additional pressure can be created by using a bandage roll or similar object, as shown in the circle.

1. Use several thicknesses of gauze or cloth to make a pad.
2. Use a wide flat strip of fabric long enough to go twice around the limb for a tourniquet (a necktie, a scarf, etc.)
3. Wrap the tourniquet around the limb over the pad.
4. Tie the tourniquet with a half-knot. Insert a small stick and tie again with a square knot.
5. Tighten the tourniquet by twisting the stick. Do not twist too hard. When the tourniquet is tight enough the bleeding stops immediately like turning off a faucet.
6. Loosen the tourniquet every 10 minutes to let the blood circulate in the limb. While the tourniquet is loosened for 1 minute (actually timed) apply pressure by hand against the wound. If severe bleeding does not start again one minute after the tourniquet has been loosened, do not

retighten, but leave the tourniquet in place for a while in case bleeding does recur.

Never cover the tourniquet with bandages or blankets. Leave it in the open where it can be seen by any doctor or first-aid worker who arrives, and where you can get at it. If bleeding is severe, be on guard against shock (page 476).

POISONS

There are three important things to do about first aid in poisonings.

1. *Always save the container and any remaining poison.* Bring both with you to the doctor or hospital. It may be necessary to identify the poison before starting specific medical treatment. Sometimes manufacturers must be telephoned to learn the composition of a trademarked substance.

2. *Dilute the poison* by drinking tap water (or milk if it is easily available). Usually water is the quickest or simplest to get at. For internal poisoning, or external irritating chemicals in the eyes or on the skin, the use of water is the best treatment. The water dilutes and weakens the poison or chemical, and because tap water can be obtained instantaneously, it is valuable for washing out poisons before they eat into tissues. In the treatment of poisons, internal or external, every minute counts. In fact, the first minute may be the most crucial. If a child or an adult happens to get an irritating chemical in his eyes, it is important to put his head under the faucet, hold the eyes open, and let the water wash out the poison; or pour the water from a pitcher or glass—as long as you get *plenty* there *quickly*.

3. *Induce vomiting*, by placing a finger down the victim's throat. If this doesn't cause vomiting dissolve a tablespoonful of salt in a glass of warm water and give this salty water to produce nausea and vomiting. This should be done immediately—before the poison can take effect. We could give you a long list of antidotes for different poisons, but you may waste valuable time looking through the medicine chest for the correct one. Always try to have the victim drink water or milk first, then induce vomiting. Repeat the drinking of these liquids and the vomiting steadily for a half hour to wash out the stomach (take the liquids with you and continue the first aid if the victim is being taken by car to the doctor or a hospital).

Call a doctor *after* you have started giving the water and have induced vomiting. If you follow this simple method you may save a life that would otherwise be lost before the doctor could arrive.

After about the first five washings with water, you can give milk if you have any handy. Milk is effective against strong alkalis and acids. For almost all types of poisoning the treatment using water or milk and induced vomiting is the best. *Lye, kerosene, and gasoline are exceptions: do not induce vomiting with lye poisons*, because you may rupture the weakened esophagus or cause other damage. Wash the poison off the face and eyes, and rush the victim to the nearest emergency medical help. If the victim will take a glass of milk, warm water, or olive oil, that is good treatment. You can soothe the burned lips, mouth, and skin by rubbing with olive oil.

Kerosene and gasoline are not very dangerous if swallowed and retained in the stomach. However, they become very dangerous poisons if drawn into the lungs. This may occur during the vomiting process. That is why first-aiders are told not to induce vomiting in cases of kerosene and gasoline ingestion. The victim should be brought to medical aid as soon as possible so that the doctor can decide how best to deal with potentially dangerous material in the stomach. Usually, if the lungs have not been affected, only a saline purge will be needed to get rid of the poison through the intestines.

For anyone who has taken an *overdose of sleeping pills or morphine* the treatment is the same as above. But if the patient is already sleepy, walk him around until he wakes up. If he is conscious, give him as much strong black coffee as he will drink. If he is unconscious and cannot be aroused, he needs immediate medical and preferably hospital care. If help doesn't arrive soon, take the victim to the nearest hospital or doctor.

Food poisoning is usually caused by bacterial contamination of food (page 29). It can also be caused by eating toadstools or poisonous mushrooms, berries, shellfish, or other foods that are inedible or have "spoiled" or have been improperly canned. The symptoms of such poisoning are usually acute and come on soon after eating the contaminated or poison-containing food. They include pain or tenderness in the abdomen, nausea, vomiting, painful spasms, diarrhea, weakness, and in some cases, such as mushroom poisoning, dimness of vision and symptoms resembling those of alcoholic intoxication.

The stomach should be washed out with large quantities of water and emetics, as described above for other kinds of poisoning. However, excessive vomiting over a period of time can cause exhaustion. Keep the patient warm and, if possible, have him drink strong coffee or tea to act as a stimulant. There is no time to waste in getting the victim to a doctor, especially if he has eaten toadstools, poisonous berries, or inedible shellfish. The symptoms of mushroom poisoning may not occur until some

time after the meal. Poisoning due to improperly canned food (*botulism*) is less apt to be fatal, but medical treatment is also necessary.

ASPHYXIA (SUFFOCATION: STOPPAGE OF BREATHING)

Asphyxia is similar to being choked. Breathing is difficult, or the person does not breathe at all. However, even if breathing stops, the heart continues to beat for a few minutes. If you act quickly, you may save a life. Apply artificial respiration after electric shock, apparent drowning, or any accident that causes the breathing to stop.

Continue artificial respiration for adults or children until a doctor advises you to stop. It has been found in cases of stoppage of breathing from electrical shock that victims have recovered even several hours after artificial respiration has been started. In these victims, the lungs are clear, but the respiration-control center in the brain has been paralyzed temporarily. If the first-aiders can keep up the supply of air by one of the techniques described, he will save a life. In drowning accidents, the situation is more complicated because there may be a considerable amount of water in the lungs; this makes it difficult for the blood in the pulmonary capillaries to get access to the oxygen of the air brought in by the artificial respiration.

SCHIAEPER PRONE-PRESSURE METHOD OF ARTIFICIAL RESPIRATION

The standard prone-pressure method of artificial respiration is as follows:

Lay the victim on his belly, preferably placing his head slightly "downhill" with one arm extended directly overhead, the other arm bent at the elbow, and the face turned outward toward the raised arm and resting on the hand and fingers of the bent arm so that the nose and mouth are free for breathing (Position 1 in Illustration 23-3).

Quickly explore the mouth for any obstruction—mud, sand, chewing gum, or displaced false teeth, for example—that would interfere with the passage of air. Loosen any constriction or tight clothing about the neck.

Kneel, straddling the victim's thigh on the side toward which the face is turned. Place the palms of your hands on the small of his back, with your fingers resting on his ribs, the little finger just touching the lowest rib. The tips of your fingers should be slightly bent inward.

Keep your arms straight and swing forward slowly, so that pressure is gradually put on the victim, at the end of the forward swing. Your shoul-

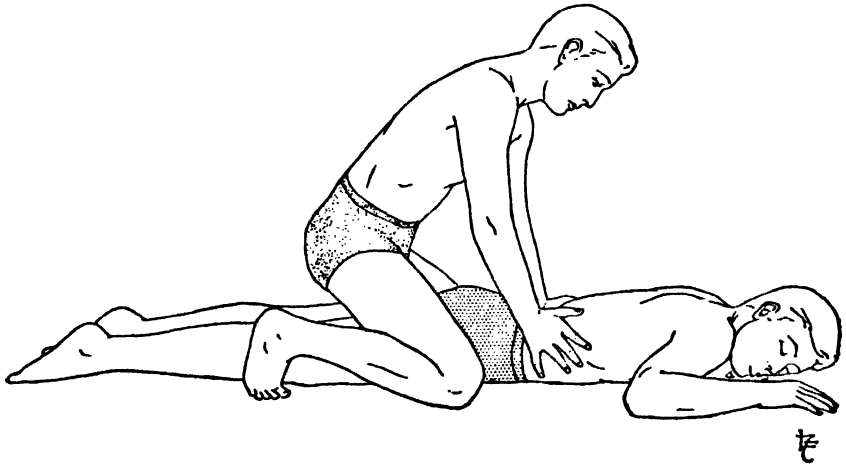
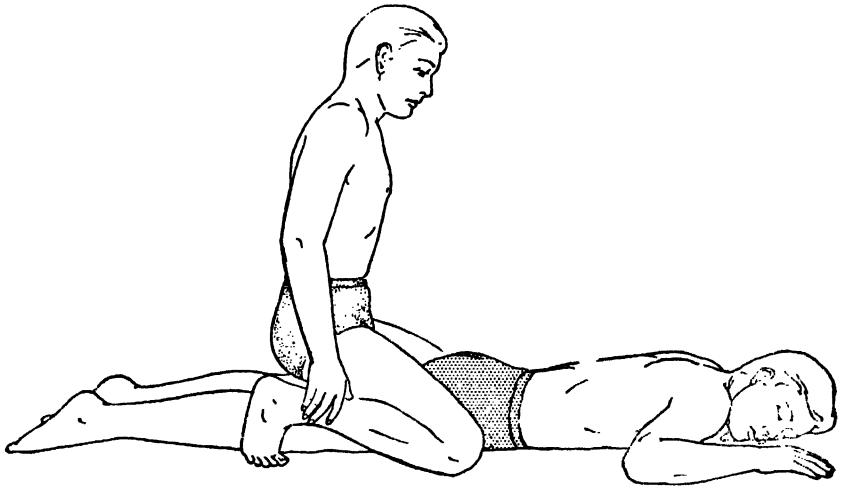


*Illustration 23-3. ARTIFICIAL RESPIRATION.
THE SCHAEFER PRONE-PRESSURE METHOD.*

ABOVE: Position to assume when relieving pressure so that air will enter the lungs. **BELOW:** Position to assume when applying pressure to empty the lungs.

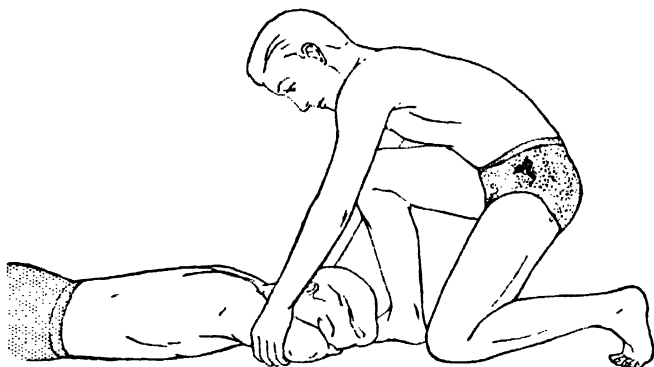
ders should be in a line directly above your hands. Do not bend your elbows. This operation should take about two seconds.

Swing back to relieve all pressure on the victim's back. Repeat 15 times a minute the double movement of pressing and letting go, making a complete respiration—forcing out and drawing in air—every four seconds.

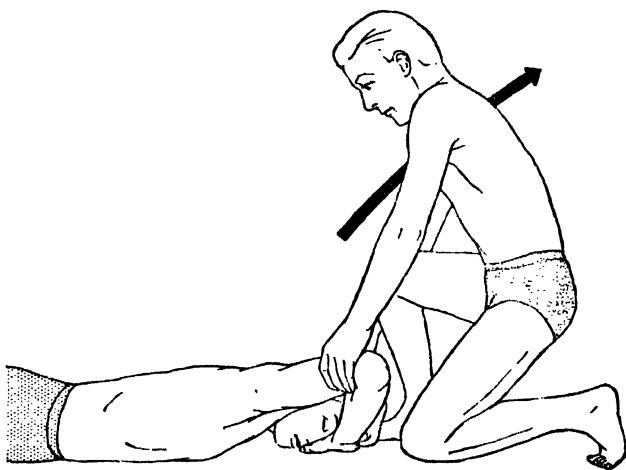
NIELSEN METHOD OF ARTIFICIAL RESPIRATION

The Red Cross and other official rescue agencies have now decided in favor of the Nielsen method rather than the traditional Schaefer prone-pressure technique. The Nielsen method gives greater exchange of air into the lungs of the person receiving artificial respiration. In some cases, this may mean the difference between recovery and death. How-

Illustration 23-4. ARTIFICIAL RESPIRATION.

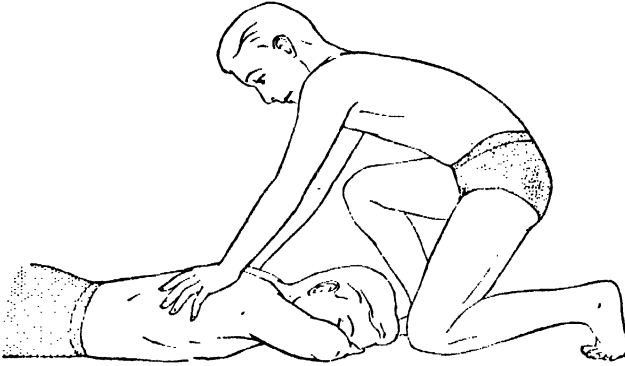
THE NIELSEN METHOD.

A. Preparing to raise the victim's elbows.

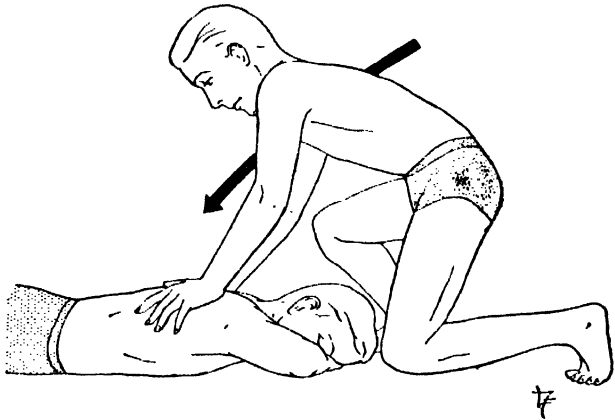


B. Raising the elbows upward and outward to expand the lungs.

THE NIELSEN METHOD.



C. Placing the hands on the victim's back.



D. Pressing down on the back to empty the lungs.

ever, it seems to me that people who have known the Schaefer method for a number of years should stick to it unless they really feel at ease with the Nielsen method. In most instances, the Schaefer method will prove satisfactory. At least, it is better to give the victim the best the Schaefer method will provide than to go through the motions of the more complicated Nielsen technique without getting any really effective exchange of air.

For new first-aiders, for young people, and for older people willing to learn a new technique, I strongly recommend the new Nielsen procedure which is carried out as follows (see Illustration 23-4): You first place the victim face down, with his head on his hands, and the mouth free of contact with any obstruction such as grass or clothes. (A) You then kneel at the victim's head. (B) Lift the victim's elbows upward and outward. This will expand the lungs and cause them to fill with air. Replace the elbows in their original position. (C) Spread your fingers, place both thumbs together, and then (D) apply full pressure to the lower part of his back, so as to empty the lungs. Release the pressure smoothly, and come back to a comfortable position. Now return to the elbow lift. The two parts of the process should be completed in about five seconds (five slow counts). Keep up the process for about 10 or 12 times per minute, timing yourself with a watch. Every few minutes stop to observe if the victim has started breathing by his own respiratory mechanism. If he has, then continue your Nielsen technique, synchronized so as to aid the victim's own breathing, until medical help arrives.

ARTIFICIAL RESPIRATION FOR BABIES

The pressure on the ribs, required in both the Schaefer and the Nielsen methods, may be difficult to apply with a small baby. You can use a rocking technique, ten or twelve times a minute, lifting the baby from the horizontal to a vertical position, and back again. The rocking motion, either on a board or in your arms, will pull air into the baby's lungs and expel it.

If you don't get any effect in starting the baby's respiration, or if his color is still blue, then shift after 15 minutes to the *Laborde method of artificial respiration*: Grasp the tongue, wrapping it with gauze or cloth to permit you to grip it, if you don't have forceps handy. Give the tongue a tug forward and upward every four or five seconds. Sometimes, this rhythmic action will start up the victim's own respiratory reflexes. If this doesn't work soon, try the *mouth-to-mouth technique*, forcing air gently from your lungs into the baby's for two seconds. Then apply suction gently with your mouth for two seconds, rest two seconds, then keep repeating.

SHOCK

Shock should not be confused with fainting. It usually follows an accident, especially a painful one or one involving the loss of blood. When a person goes into shock he becomes pale and his skin feels cold

and clammy. He breathes rapidly and his pulse beats faster and more faintly. He may become partly or completely unconscious. Severe shock may result in death. The rapid, weak pulse and cold clammy skin of the person in shock are not usually seen in people who have only fainted. To prevent shock or to speed up recovery:

1. Keep the victim lying quietly with his feet higher than his head (except in cases of head injuries). Cover him with warm blankets. Recent studies have shown that it is unnecessary to keep the patient very warm; too much heat may be harmful. If hot-water bottles are used they should be warm, not hot. Just see that he does not feel cold.

2. If he is fully conscious, give him warm drinks.

3. Remember that prolonged, severe shock may kill. Usually, the severe shock that follows a major hemorrhage, an automobile accident, or a gunshot wound, will require transfusions of blood or plasma. You can best help to prevent the fatal outcome of shock by (a) stopping bleeding if it exists; (b) relieving agonizing pains such as may be present from a severe fracture. It would be desirable to wait for a doctor to give an injection of morphine to relieve pain, before trying to transport the victim to a hospital if there is a long trip ahead for him. In the event that no pain-stopping medicine is available, talk reassuringly to the victim, and hold his hand. This may rally his vital forces enough to delay the onset of shock.

OTHER EMERGENCIES THAT THREATEN LIFE

If you are prepared to give first aid for the severe cases of poisoning, hemorrhage, asphyxia, and shock, you will be ready to deal with almost all of the major emergencies. Here are a few more situations you may be confronted with, in which you can save a life.

FLAMING CLOTHES OR HAIR

Pour water, milk, or other noninflammable fluid on the victim if sufficient amounts are *readily* available. Don't go for water if it is not handy. Take a coat, rug, blanket, or anything similar, and cover the flames and smother them with the covering. Beating out the flames with your hands can injure the burned person—as well as yourself.

VICTIM IN CONTACT WITH LIVE ELECTRIC LINE

If you pull the victim off without precautions you may be electrocuted, too. The key safety theme is *dryness*. Use dry sticks, dry news-

papers, or dry gloves over your hands. Stand on something dry. Electricity passes through water or moist articles. You must provide perfect insulation before you remove the victim who is connected with a high voltage electric wire. Of course, it is ideal to have the current turned off, but this is usually not possible in outdoor accidents.

SUNSTROKE OR HEATSTROKE

The symptoms of sunstroke and heatstroke are high fever, dizziness, headache, a dry hot skin, red face, and rapid pulse. If the heatstroke is severe, unconsciousness may result.

Call a doctor. Put the victim in a cool place and cover him with a sheet. Loosen all clothing. Apply cold water over the body quickly and in large quantities to reduce the high fever. Use a garden hose (in a gentle stream, *not* full force), or a bathtubful of very cold water.

SNAKE-BITE

I have purposely placed snake-bite close to the bottom of the list of serious emergencies to emphasize the fact that it is much less important than you have been led to believe. Snake-bite accounts for only a fraction of accidental deaths compared to bleeding, poisons, and asphyxia. If people were only as cautious about their automobiles or their swimming habits as they are about stepping into ground where a poisonous snake has been seen, the national safety record would mark a real victory.

Most snake-bites can be prevented by two easy precautions based on the fact that snakes bite feet and ankles, or hands. (1) In snake-infested areas, wear high shoes or heavy trousers or dungarees which are fastened to the tops of your shoes by secure ties. This will prevent bites if you accidentally step on a snake. (2) Never put your hand onto a ledge or rock unless you can see that a snake is not lying there. You should always poke ahead of your hand with a stick to frighten any snakes away. These two precautions will prevent nearly all snake-bites.

Treatment of poisonous snake-bite. The bite of a poisonous snake will cause immediate swelling and discoloration near the bite.

Step Number 1. Apply a venous tourniquet to prevent the poison from being absorbed into the body through the veins. This tourniquet is placed *above the bite* to prevent flow of blood toward the heart. A venous tourniquet can be made with a belt, a necktie, or heavy cloth.

It doesn't have to be tied as tight as an arterial tourniquet because the veins are compressed more easily.

Step Number 2. Decide on how to get the victim medical aid so that he can receive an injection of *antivenin*. Your judgment will be required in any individual situation as to whether the victim should be transported to the doctor, or the doctor summoned to him. Notify the doctor about the species of snake, if that is known. (See Illustration 9-5, page 216.) If the snake can be killed safely, bring it with you to the doctor.

Step Number 3. Until the doctor takes over, you should start removing the snake venom from the bite. Make cuts in a criss-cross fashion over the bitten area, cutting about one-quarter inch deep. Don't be frightened about the bleeding. That helps wash out the poison. Now, you can save a life by actually sucking the poison out of the place where you made the cuts. Snake poison is harmless when taken into the mouth unless you happen to have an open cut or sore. Suck out the poison and spit it out; it will not be harmful even if swallowed. (Of course, it is easier and much pleasanter to use a suction cup if there is one available in your emergency kit.)

Step Number 4. Do not give whiskey. Reassure the victim. Give him coffee or other warm drinks if he wishes them.

STRANGULATION BY FOREIGN BODY IN THROAT OR GLOTTIS

This is another emergency in which you may be called upon to save a life. Perhaps no other of the major first-aid problems calls for so much coolness and judgment on your part. Suppose, for example, you have guests for dinner, and suddenly a friend, while eating his meat, swallows a large piece "the wrong way." In other words, he has lodged the meat in his glottis, the upper part of the windpipe. If he is lucky, nature will bring it up for him in a violent fit of coughing. *But* imagine the situation in which the piece of meat has lodged securely in his glottis. The person begins to choke, he makes gasping sounds, begins to turn blue. He points to his throat because his speech is cut off, begging everyone to help him. You happen to be too far away to summon a doctor, and there is no hospital near enough at hand. What do you do?

1. Have someone phone the police explaining the emergency.
2. You, the first-aider, must try to remove the piece of meat. You have only a few minutes if the obstruction is complete because the human body can stand complete stoppage of oxygen for only about 15 minutes at the most.
3. Take a good look with a flashlight or a lamp. If necessary, darken the room. If you see the tip of the obstructing substance, try to grasp it

with your fingers, or crook your little finger around it. Then pull out. Don't push because this will only make the situation worse. If this doesn't work, take the nearest thing to forceps—a tweezers, a beer-can opener—anything that you think will hook into the piece of meat, and enable you to haul it out. Don't worry about cutting the throat. You have only one task, and that is to relieve the strangulation. The bleeding can be stopped when medical aid arrives.

4. If the above doesn't work, then next try to dislodge the foreign body by means of combined gravity-pull and coughing. Put the person nearly upside down, and urge him to cough. You can help by squeezing his lower rib vigorously. If the obstructing substance hasn't been completely coughed up, it may still have been dislodged sufficiently so you can now remove it by the technique just described in (3) above.

5. Suppose all this fails. The person has turned blue, and looks as though he will die in a few minutes. No medical help is heard on your doorstep. Now you must say a prayer, and open the windpipe below the obstruction. Forget about infection and bleeding. Take the sharpest steel knife you have, or a scissors, or anything that has a real cutting edge, and get to work. If possible, have someone pull the head back to stretch the neck. Your target is the hard "pipe" you feel below the Adam's apple. Cut horizontally if you can feel the open space between the rings of cartilage. If not, just make an opening in any way you can. When you have succeeded you will hear air being sucked in. Make the opening sufficiently large so that air comes in freely enough to restore the person's normal color.

Never attempt this drastic procedure unless you are sure that (a) the person has really inhaled a foreign body, (b) it can't be dislodged, (c) no medical help can be obtained immediately, and (d) the air stoppage is so complete that the person is suffocating.

FIRST-AID MEASURES THAT DO NOT REQUIRE LIFE-AND-DEATH DECISIONS

FRACTURES

A fracture is a broken bone. When no break in the skin occurs, it is called a simple fracture. If the broken bone pierces the skin and is exposed, it is a compound fracture. The two types are shown in Illustration 23-5.

The best treatment is to keep the patient lying down quietly and to call the doctor. Never attempt to set the bone yourself unless you are a specially trained first-aid worker. Many times the doctor himself cannot

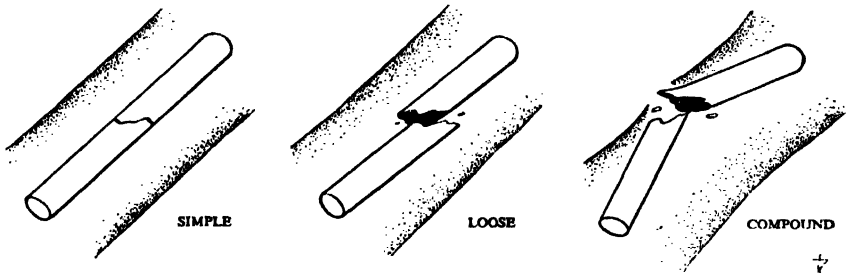


Illustration 23-5. MAIN TYPES OF FRACTURES.

LEFT: The bone is broken but the ends have not separated. **CENTER:** The ends of the broken bone have separated to some extent. **RIGHT:** The end of the broken bone penetrates through the skin.

determine the extent of injury without further examination and x-rays. Watch the person closely for signs of shock (page 476).

Keep the patient lying down and warm to prevent shock. Splints should be put over the injury only if it is necessary to move him (see illustration, page 493). But if it is at all possible, it is best that he lie still. He should not be moved because if his spine is fractured, any attempt to lift or turn him may make him paralyzed.

A concussion or a fractured skull may result from a severe blow on the head. Keep the victim lying quiet and warm. If he is flushed, his head should be slightly elevated; if he is pale, let his head lie on the same level with the rest of his body or slightly lower. Call the doctor.

HEAD INJURIES IN CHILDREN

Children often bang their heads against things or bump them in falling. Usually, this causes no damage. However, to be on the safe side as far as potentially serious concussions and fractures of the skull are concerned, be sure to observe the following precautions:

If the child is knocked out, that is, if he is rendered unconscious, for even a moment, call a doctor or take the child to a hospital.

If the child is not knocked out and cries promptly, watch him for the next twelve hours. Call a doctor if the child vomits, becomes drowsy, or cannot be aroused when he is sleeping.

DISLOCATIONS

A dislocation is a bone out of place at the joint. Many times this is the result of broken bones.

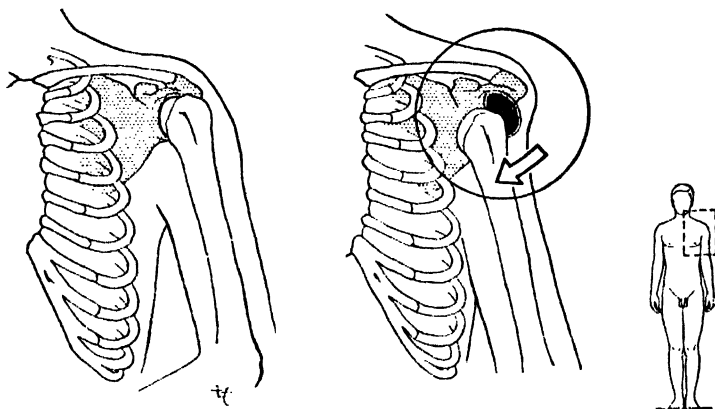


Illustration 23-6. DISLOCATION OF THE SHOULDER.

LEFT: Normal shoulder. The shaded area indicates the scapula (shoulder blade). **RIGHT:** Dislocation. The end of the humerus (upper arm bone) has completely separated from its socket (darkened area) and moved forward in the direction of the arrow.

Send for a doctor. Never try to put the bones back into place except in a dislocation of the finger or lower jaw (and then only when medical help is not available).

Dislocated finger: Pull the end of the finger toward you. With the thumb and forefinger gently press down on the joint until the bone slips back into place. Treat for shock if necessary. Never attempt to fix a dislocated thumb.

Dislocated jaw: The lower jaw hangs loose and the victim is unable to close his mouth. Wrap your thumbs in cloth to protect them against biting. Put your thumbs on the lower teeth near the gums. Press down, then back and up under the jaw with your fingers. As the jaw closes slip your thumbs between the teeth and cheek so they will not be caught between snapping teeth as the jaw springs back into place.

SPRAINS AND STRAINS

In a strain, the muscle stretches and becomes quite painful. You can get a strain by taking a wrong step and stretching a muscle that supports the ankle. Although you may find it very painful to walk, you can still manage. Treatment consists of rest for the injured part, the application of heat, and light massage.

A sprain occurs when a ligament connecting bone or supporting a

joint is torn. In this case the pain is very severe, and if the ankle is injured, you cannot walk at all, or with great difficulty.

The injured part swells, and there is pain and discoloration of the skin which becomes red or reddish blue.

Sometimes what may seem to you to be a sprain is really a fracture. Call the doctor. While waiting for him, lie down and rest the injured part on a level above the head; apply cold cloths or an ice pack to the area for ten minutes every two hours.

BRUISES

A bruise is usually caused by a fall or a blow. The skin is not broken, but the tissues under the skin are injured, resulting in pain, swelling, and black and blue marks due to the blood that has collected under the skin. A good example of a bruise is a black eye. Apply ice packs on the bruise, or a cloth dipped in cold water and wrung out. This relieves the pain. The blood that has collected is usually absorbed gradually, without causing any difficulty. If the bruise is severe and there is a great deal of swelling and pain, call the doctor. If it is necessary, he may remove the collection of blood, or he may use one of the new medicines that are helpful in such cases.

SERIOUS BURNS

The degree of a burn depends on whether or not the skin is broken. In minor (first-degree) burns the skin is red, but unbroken; there is no danger of infection.

Deep burns (second- and third-degree) are more serious. The skin is broken and blisters develop. Since the wounds are open, danger of infection is present.

Cover the burn with sterile gauze. Wrap the victim in blankets and keep him warm. Call the doctor or take the burned person to the hospital.

Warning: Never apply any greasy ointments like petroleum jelly to a deep burn. Never apply tincture of iodine or place absorbent cotton on the burn. Do not try to pull away any fabric stuck to the injured skin. Cut around it.

CHEMICAL BURNS

Wash the injured area with water. Use plenty of water and use it constantly while you are waiting for the doctor to come. If chemicals get

into the eyes, you can put in a few drops of pure mineral oil after the eyes have been washed several times with water.

SUNBURN

This is treated like any other burn in which the skin is reddened but not broken. Petroleum jelly or olive oil may help reduce the pain. (See also page 207.) If sunburn is severe, the victim may have shivers and a fever. Call a doctor while you keep the patient warm under blankets.

MINOR BURNS

In minor burns apply a paste of baking soda and water, or petroleum jelly, and cover the burn with sterile gauze. Your purpose is to relieve pain. You will also find helpful the analgesic ointments recommended on page 496 for your home medicine cabinet.

CUTS

For *small cuts and scratches*, cleanse the wound with sterile cotton dipped in warm, soapy water, followed by plain warm water. (Water from faucet is safe.) Then cover it with sterile gauze. If the cut or scratch is very small, a Band-aid will do.

If the wound is very dirty, if it is a deep puncture wound or one caused by firecrackers, the patient should have an injection of tetanus antitoxin to prevent lockjaw. If he has previously been immunized with toxoid (this is true of all men in the armed forces) all he needs is a booster dose of toxoid. As a general preventive measure, everyone who has not already been immunized should have the protection of tetanus toxoid (see page 183).

Any cut that goes deeply into the skin may heal better if it is sewn together. If in doubt, let your doctor or the nearest hospital emergency room decide for you. Otherwise you may blame yourself, in later years, for an unsightly scar.

SPLINTERS

To remove a splinter from the skin, first sterilize a large needle by either boiling it in water or holding it in the flame of a match. Let it cool. Wash the skin with soapy water or alcohol to sterilize it, too. Press the point of the needle against the skin, scraping and digging gently until the splinter is loosened or removed. Sometimes, when the splinter is

partly out, you can best remove it then with a pair of tweezers, which have also been sterilized in alcohol.

FOREIGN BODIES IN THE EYES

Cinders, grit, or any other foreign bodies in the eye are best removed by washing the eye liberally with clean water or sterile physiological salt solution (page 133). Use a clean dropper. If this procedure doesn't work, then you may try direct removal if the particle is plainly visible and not imbedded in the eyeball. Make certain the light is good. Better still, if possible use a flashlight in a dark room to search for the object. You can use a bit of cotton wrapped around a toothpick or matchstick and dab gently over the eyelid. If the pain persists, it would be better to go to a doctor or the nearest hospital to have the particle removed. Do not rub the eye. If the pain is severe, put a few drops of pure, plain mineral oil in the eye.

If you are far from a doctor or first-aid station, and are confronted with a foreign body under the upper lid, you can invert the lid by the technique shown in Illustration 23-7.

If despite all efforts you haven't succeeded, and if antibiotic *eye ointment* is available, place some of this in the painful eye until the person is brought to medical aid.

TOOTHACHE

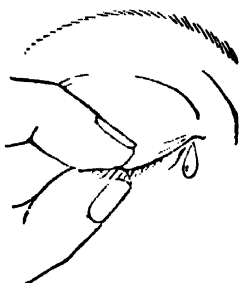
Toothache may be *temporarily* relieved by taking aspirin or Bufferin (see page 74), or codeine and Demerol if you have a doctor's prescription for the latter two. If the toothache is due to a cavity or the loss of a filling, put some oil of cloves on a tiny bit of cotton and pack it into the cavity. It is important to place it *in* the cavity and not just against the aching tooth. You can usually locate the hole even when it is in the inner part of an upper tooth; use a pocket mirror small enough to fit part way into the mouth, and pick up the image it reflects on a larger mirror. Pack the oil-soaked cotton firmly into the cavity with a toothpick or the sharpened end of a wooden match.

The pain of toothaches that are not due to cavities can sometimes be relieved by applying heat or cold to the outside of the jaw. (See Chapter 4, page 67, on the teeth.)

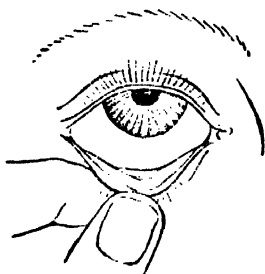
NOSBLEEDS

A slight nosebleed usually stops by itself. If bleeding continues or is severe, put the person in a chair and loosen clothing around the neck.

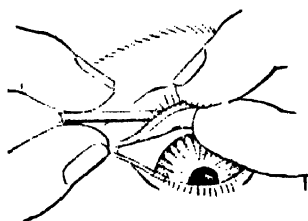
FRONT VIEW



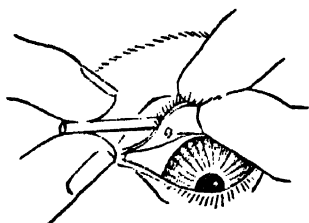
Pull upper lid down and out, causing eye to water and foreign object to be expelled.



That failing, search for object on lower lid while eye is raised.



That failing, pull out and up on upper lid; place smooth match stick above margin of lid while patient is looking up; as he looks down, quickly flip lid over match stick as shown.



Foreign object is exposed and can be carefully removed with end of soft, clean handkerchief or bit of cotton on end of toothpick.

CAUTION: do not attempt to remove anything embedded in the eyeball.

SIDE VIEW
(FINGERS OMITTED)



7/2

Illustration 23-7. REMOVING A FOREIGN OBJECT FROM THE EYE.

Apply cold compresses to his nose. Because almost all nosebleeds occur in the soft part of the nose, it helps to press the nostril on the bleeding side against the bone for about five minutes. Or plug up the bleeding nostril with sterile cotton. Keep the patient sitting, unless he feels faint. If bleeding persists, call the doctor.

FAINING

When a person is about to faint, he becomes dizzy, turns pale, and feels weak. He may or may not become unconscious.

The best way to avoid fainting is to lower the head between the knees for about five minutes. If the person still feels dizzy, the head-lowering should be repeated.

If the victim has "passed out," loosen his clothing and see that he gets plenty of fresh, cool air. Place smelling salts or a few drops of aromatic spirits of ammonia under his nose until he revives. If he does not regain consciousness within five minutes, call a doctor.

HEAT EXHAUSTION

Heat exhaustion may come from long exposure to heat or from too much activity in a strong sun, leading to the excessive loss of salt from the body.

The victim has a pale, cold, moist skin, rapid pulse and breathing, low temperature, dizziness, and a tendency to vomit. Call a doctor. Make the victim lie down and cover him with blankets, over and under his body. Give him one teaspoonful of salt in tomato juice or in a pint of water and repeat once or twice afterward. You can also feed hot coffee or tea. Make certain he is lying with his head low, and his clothing loosened.

FROSTBITE

In frostbite a portion (or portions) of the skin is white and numb. The flesh feels cold to the touch.

Cover the frozen part with clothing or with your hands or any other part of the body. A frozen hand can be placed between the thighs or under an armpit for warmth.

Thaw out the frostbitten area gently. The circulation must return slowly. Do not try to hasten its return by rubbing or massage; do not rub with snow! Frozen tissue bruises easily and frozen fingers can be easily broken off. Don't place the victim too near a hot stove or radiator. Do

not place a hot-water bag on the injured part. Call a doctor, or take the victim to a hospital. (See also page 154.)

ANIMAL BITE

In all cases of animal bite, the danger of rabies exists. Rabies can be spread not only by dogs, but by the bite of foxes, cats, squirrels, coyotes, horses, cows, swine, and other warm-blooded animals. If rabies is not treated, it usually results in death.

First wash the wound under running water, scrubbing with plenty of soap. Pour warm soapy water, ten times, into every crevice of the bite. Either call or visit the doctor as soon as you can. The doctor will apply further treatment which may include the well-known Pasteur vaccine treatment, or the new serum method. If the bite was on the head or neck, the prophylactic treatment should be started at once.

The animal should be caught and examined for rabies.

INSECT BITE

For any type of insect bite, apply a paste of baking soda and cold cream, or calamine lotion with 1% menthol. Soothing ointments such as Quotane or Nupercaine may be applied. Do not scratch the wound.

If stung by a bee, remove the "stinger" with a pair of forceps, if possible, and apply washing soda or a few drops of diluted ammonia. If stung by a wasp, hornet, or "yellow jacket," use a little vinegar or rub with a piece of onion. Rubbing alcohol is helpful for wasp or ant bites. Cold compresses help to relieve the pain. Be sure to see a doctor if the sting happens to be on the tongue or any other part of the body where a swelling can be serious, or if pain and swelling persist, or if a number of stings have been inflicted.

Some people are *allergic* to the stings of wasps and bees. See a doctor immediately if there are symptoms indicating this, such as collapse or a swelling of the body. People who know they are allergic to stings, or who live in places where they are apt to be stung and where no medical help is readily available, should ask their physicians for antihistamine pills or capsules which will be helpful in case of an allergic reaction. (See Allergy, page 739.)

The stings of *scorpions*, *centipedes*, and some *spiders* can be serious. Get rid of as much of the poison as possible by encouraging bleeding and by suction (see page 479). See a doctor as soon as possible if there are any symptoms beyond some local swelling and discomfort. Most black-widow-spider bites can be prevented by poking underneath the seat before sitting down in *outdoor* toilets and privies where these spiders hide.

CHILDBIRTH

It is extremely unlikely that you'll ever have the responsibility of helping a baby into the world, but I'm including it because people often ask about it—especially prospective fathers.

There is very little you need to, or should, do. If the baby is born so rapidly that the mother can't get medical assistance, it is almost bound to be born naturally and easily. First—the things you should not do: Don't touch the area of the mother's body around the place from which the baby emerges. Don't attempt to pull or help it out in any way. Don't attempt to pull out the afterbirth if it, too, should be expelled before the doctor arrives.

Here is what you should do: Be sure a doctor or ambulance has been summoned; the telephone operator will help if necessary—provided you are not too flustered to tell her your name and address.

Wash your hands. After the baby arrives, wipe his mouth, nose, and face with the inside of a clean handkerchief or other cloth—not a cleansing tissue. If he should be “wearing a caul” puncture this thin sac with a pin or the tip of a scissors, and then wipe his face. Leave the baby between his mother's knees (which should be raised while she is giving birth), being certain his face is not in any blood or other fluid. Be sure that the cord attaching him to his mother is slack—don't stretch it. Cover the baby, all but his head, with a blanket.

Wait about an hour for the doctor. If he does not arrive you should tie the cord tightly, about six inches from the baby, with a clean piece of tape or twine; make a second tie about two inches farther away from the baby. Cut between the two tied places with a clean scissors or sharp knife, which you have dipped for five minutes in alcohol. Put the baby in a warm place, on his side.

If the doctor still is not there, and the afterbirth should appear, don't throw it away as he will want to inspect it. After it has been completely expelled, put your hand on the mother's abdomen, just below the navel, and massage the firm lump which is the uterus. If it doesn't stay firm, cup your hands around it, and massage or knead it till it does.

OTHER EMERGENCIES

In various places in this book, certain emergency conditions in which you may be called upon to give first-aid treatment are described. These conditions are discussed in connection with my full account of the illness in which they may occur. Some are listed below; the others you can locate quickly by reference to the Index.

CONVULSIONS IN CHILDREN (nonepileptic type), page 429.

EPILEPTIC SEIZURES, page 684.

CROUP, page 428.

DIABETIC ACIDOSIS AND COMA, page 91.

INSULIN REACTIONS (insulin overdosage), page 90.

HEART ATTACKS (coronary occlusions), page 605.

STROKES (apoplexy; cerebral hemorrhage; "shock"), page 617.

BANDAGING

I have intentionally placed the section on bandaging at the very end of this chapter. In my considered opinion, it is the least important part of first aid.

I have become convinced, from observing as well as teaching first-aid courses, and from reading books on the subject, that far too much time is usually devoted to bandaging. As a result, the first-aider tends to place undue emphasis upon it, at the cost of matters such as those I have described earlier in this chapter, which can enable him to save a life.

Emergency bandaging is simpler today than it was in the past, before Band-aids and similar innovations of all sizes and shapes were readily available; almost everybody is familiar with them, or can learn to use them with a minimum of instructions. Adhesive tape, elastic bandages, and other comparatively new products also simplify bandaging for the first-aider.

However, he may also have occasion to use the somewhat more complicated bandages shown below (Illustrations 23-8 A and B). Individuals vary a great deal in their ability to make and apply these bandages. They may be clear to you after you merely glance at the pictures. If not, I suggest that you try them out as soon as possible, before an emergency arises. In case you have difficulty with any of them, ask someone to help you—a friend whose abilities lie in that direction, a first-aid instructor, a nurse, or a doctor.

These are the essentials to remember when you are applying bandages: (1) in bandaging cuts, wounds, or burns, your purpose is to stop the flow of blood, or provide protection against contamination, or both. Always put a sterile pad or piece of gauze over the injured area; then put the tape or bandaging material *over that*, to hold it in place—not in direct contact with the wound. (2) Do not make the bandage too tight. Pressure should be applied only for the purpose of arresting the flow of blood, and should not be continued indefinitely (see page 469). If there is only a small amount of bleeding, it will stop by itself. First-aiders sometimes bandage so tightly as to interfere with the circulation; I have

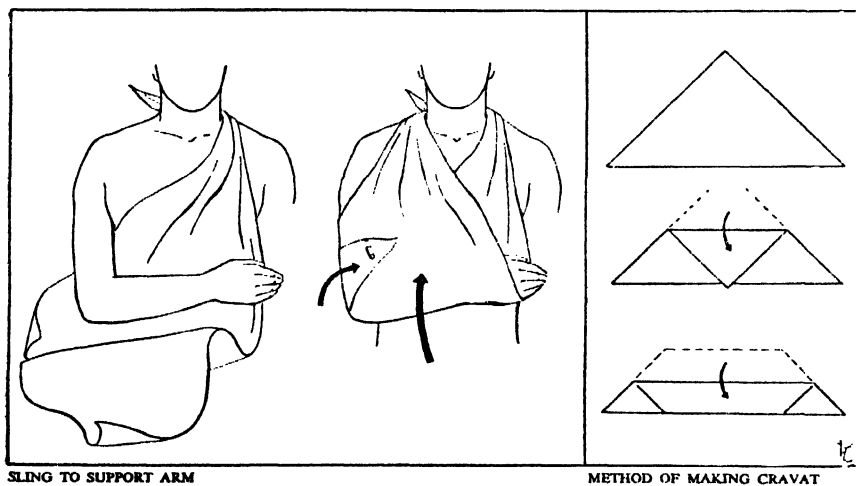
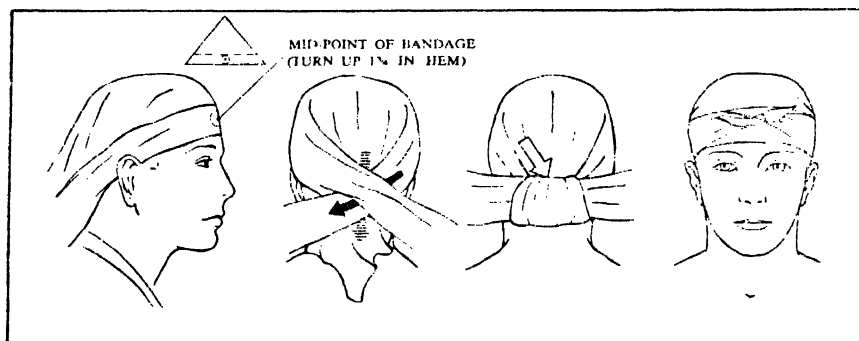
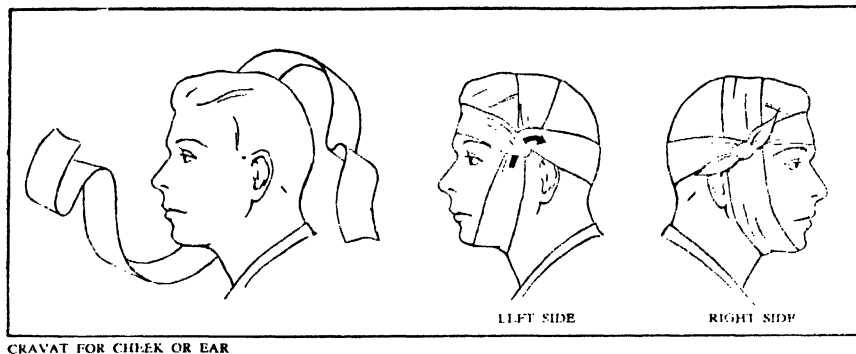
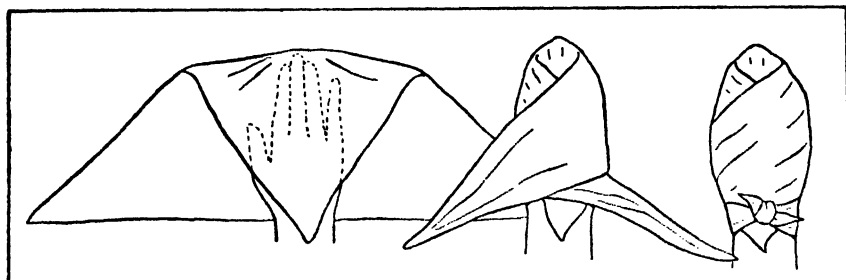
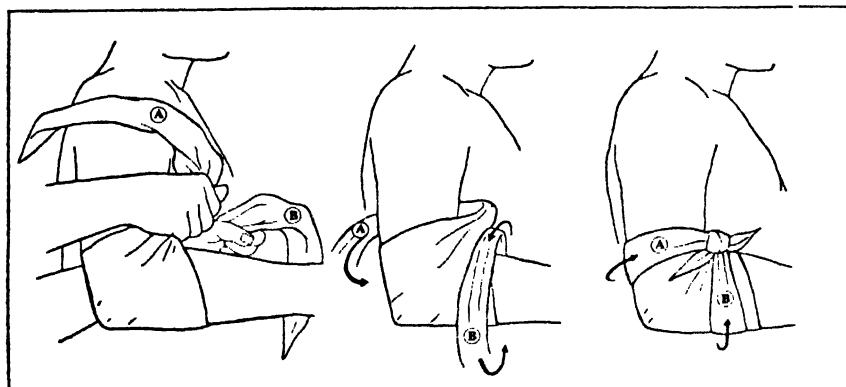


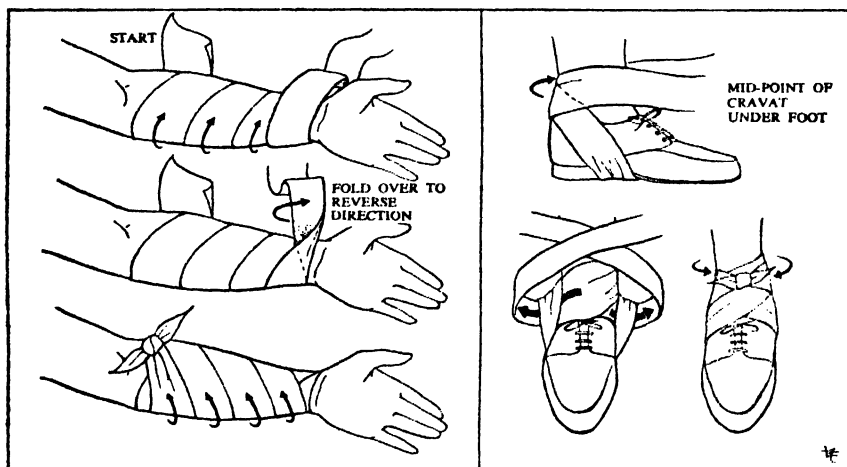
Illustration 23-8A. BANDAGES.



TRIANGULAR BANDAGE COVERING ENTIRE HAND OR FOOT



CRAVAT (WIDE) FOR ELBOW OR KNEE



CRAVAT (WIDE) FOR FOREARM OR LOWER LEG

CRAVAT (WIDE) FOR SPRAINED ANKLE

Illustration 23-8B. BANDAGES.

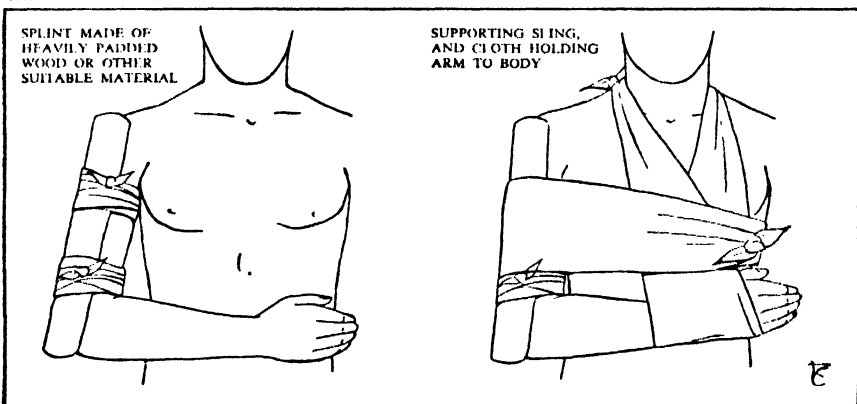
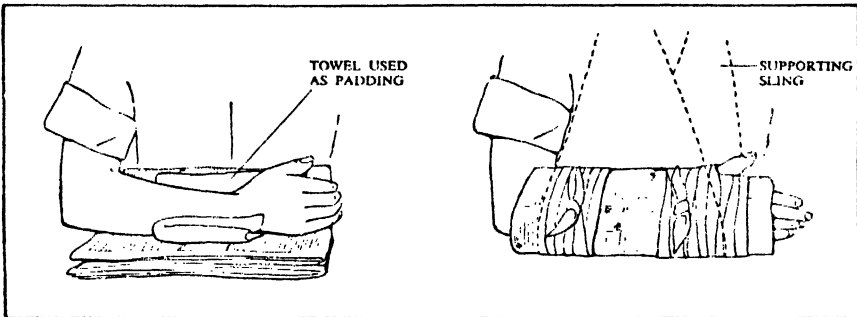
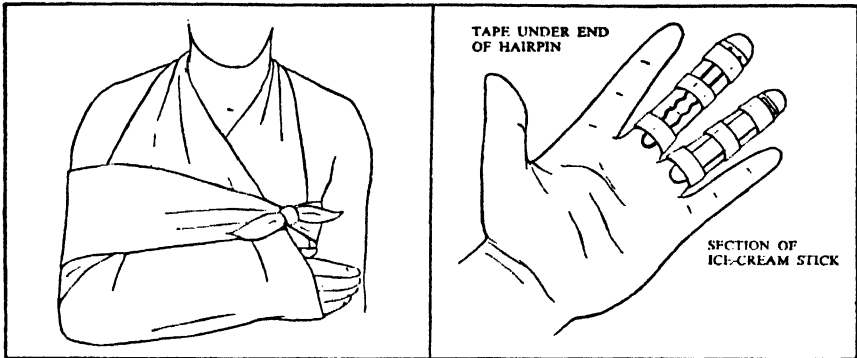


Illustration 23-9. SPLINTING.

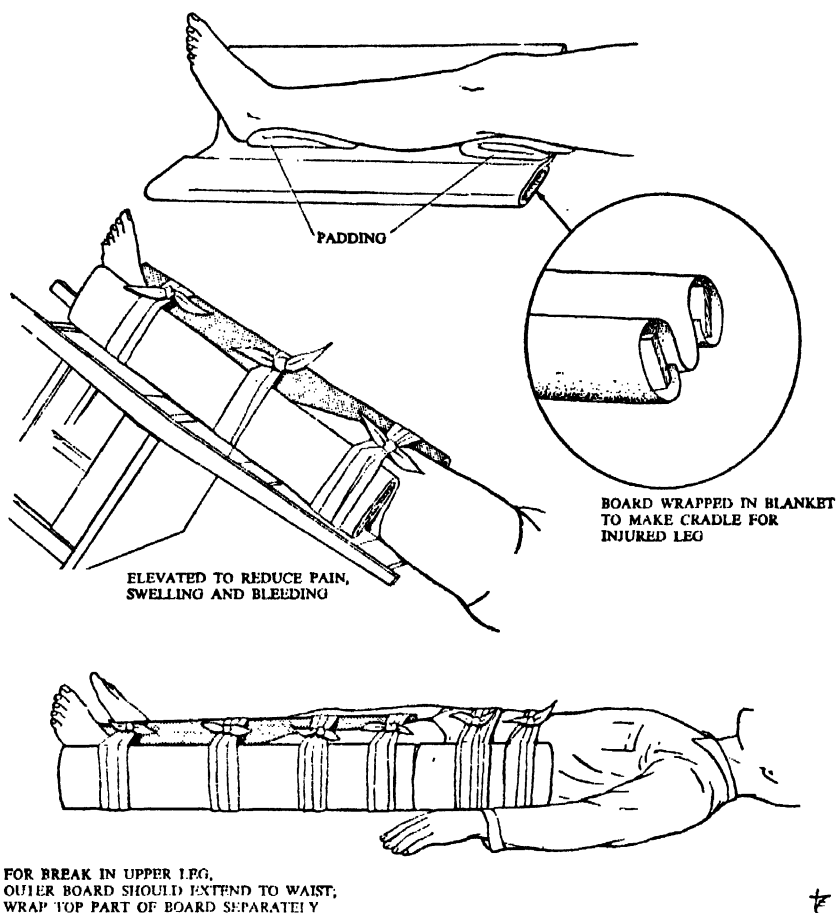


Illustration 23-10. SPLINTING LEG.

seen Band-aids applied so snugly on a cut finger, for example, that its tip becomes cold and even turns blue. (3) Bandages are also used to immobilize an injured part, that is, to prevent motion which may cause further injury as well as pain. A bandage does not have to “look pretty” in order to be effective. The one you apply is usually only temporary, and will be replaced by your doctor or someone in the emergency room of a hospital. Don’t be too concerned about its appearance, but concentrate on the purpose for which it is applied.

Your Home Medical Supplies

FIRST, keep the items required for first aid in a separate container, or shelf; otherwise, if they are used routinely, they may not be available when urgently needed. *Second*, take your first-aid materials in a kit or box when you go for automobile or camping trips. *Third*, if you live in a rural area or any place where medical care is inaccessible, and there is no nearby pharmacy, you should arrange with your doctor to have penicillin and other antibiotics at home. (See page 217 for antibiotic first aid.) *Fourth*, keep all medicines and instruments out of reach of children. But make sure that the first-aid cabinet is not locked with a key; it must be opened at once in case of an emergency. *Fifth*, all medicines should be labeled to indicate what they are, what they are to be used for, and the quantity to use, so that you will not make a mistake in an emergency. Consult the Index for uses and dosages of the medicines listed in this chapter.

FIRST-AID SUPPLIES

Sterile gauze pads, twelve 2 x 2 inch
Small roll of adhesive tape, ½ inch wide
A box of Band-aids, assorted sizes
A roll of sterile absorbent cotton
A few applicator rods
A few tongue depressors
2 thermometers (see page 407)
1 flashlight
A roll of gauze bandage, 1 inch wide
A pair of scissors (bandage type preferred)
A pair of sharp-pointed tweezers
A thick, blunt needle for removing splinters
A small tube of petroleum jelly
Safety pins
Small amount of oil of cloves

A tourniquet

A small bottle of aromatic spirits of ammonia

Two ounces of 70% alcohol

A tube of soothing ointment for small burns or insect bites (Calmitol, Quotane, or Butesin Picrate.)

One small package of soothing anal suppositories (e.g., Anusol, Surfaccaine)

A suitable sling to immobilize arm or shoulder in case of sprain

Elastic bandage

GENERAL HOUSEHOLD MEDICINES AND EQUIPMENT

Aspirin (or Bufferin, Empirin, or other aspirin-containing tablet). If there are young children, have a supply of flavored aspirin tablets or soluble aspirin on hand.

Tincture of belladonna, 1 ounce

Paregoric, 1 ounce

One-fourth ounce of essence of peppermint

A mild laxative such as milk of magnesia

One ounce of witch hazel

An enema set

A hot-water bottle

An electric heating pad

An ice bag

Bicarbonate of soda

Surgical powder or styptic for shaving cuts

CHAPTER 25

Nursing in the Home

WHEN SHOULD A PATIENT BE CARED FOR AT HOME?

MAKING the right decision about this is one of the most important parts of home nursing! Sometimes it is made for you: there is no choice but to care for the patient at home. If there is a choice, here are some of the points that should be taken into consideration—often they must be weighed against other factors such as expense, home conditions, the other members of the family, and so on:

1. Remember that, once the decision has been made, it may be difficult or even impossible to change it. For example, a sick person might be terribly upset about being moved to a hospital during the course of the illness, considering it an indication that the situation had become critical or even hopeless. Don't decide impulsively. *Always talk it over thoroughly with your doctor first.*

2. In certain illnesses, a hospital is essential due to the treatment required, or the special equipment that may be needed in an emergency. Surgical operations, diabetic coma, hemorrhage from a stomach ulcer, polio, rheumatic fever, and certain cases of pneumonia fall in this category.

3. In general, a sick child is better off at home than in a hospital. Sick children have a great need for close contact with their parents, and for their home environment. There are a few hospitals which make it possible for the mother to be with the child most of the time, and even arrange to have her sleep with the child. In this case a hospital may be best. But staying in a hospital which his mother can visit for only limited periods is apt to be a very bad experience for a child, with subsequent emotional upsets, as well as a lowering of morale. However, certain diseases such as rheumatic fever and polio (infantile paralysis) are usually handled so much better in a hospital that the scales are tipped in that direction.

4. Very old people, like children, find it difficult to adjust to a new environment. They, too, are usually better off if they are cared for at home.

5. Social conditions must outweigh the individual's needs. Patients

with certain communicable diseases must often be hospitalized for the protection of others. These diseases include infantile paralysis, typhoid fever, diphtheria, and some others.

6. A seriously ill adult (who is not elderly) may *think* he or she would be better off at home, but almost always benefits from hospitalization. A truly sick person needs to mobilize his emotional and physical strength to overcome his illness. The tensions or distractions at home make this very difficult.

7. Tuberculosis presents a special problem. Recovery from it is slow, and the prospect of a long stay in a sanatorium seems unbearable to the patient. He pleads with the family and the doctor to be allowed to take the "cure" at home. Since this cure appears to be simple, his plea is often granted—and then the problems begin. Read the details about the treatment of tuberculosis of the lungs which I give on page 639.

8. I believe that a mentally ill person should practically never be cared for in the home, for reasons I explain in Chapter 13, page 275.

NURSING IN THE HOME

Good home nursing requires more than an assortment of facts about how to make beds, take the pulse, and give medicines; it even requires more than a willingness to work hard, important as these things are. Sympathetic understanding of the patient and intelligent planning are also essential.

Sympathetic understanding is not necessarily inborn. It can be developed. If you have ever been ill or have been with a sick person, you should have some useful information to go on. Thinking about it will provide many useful clues. Also, at some time in your life you should be able to spare a few hours to visit an invalid, or help in a hospital, or devote to a church or other charitable effort in behalf of the ill. Make a point of doing this, not only as an act of kindness on your part, but for the opportunity to learn what people are like when they are ill.

Use your imagination. Ask yourself, "What would I like?" and follow it with, "But he—or she—isn't *exactly* like me, so what would he or she like?" The most obvious things will come to your mind first—a calm, cheerful atmosphere, efficiency, and appetizing meals. But concrete examples of things to do and not to do will occur to you from time to time if you are alert to them. Make a point of remembering them.

PRACTICAL NURSING EXPERIENCE

Almost every woman, and many men, would find a nursing course of some kind extremely valuable. Why not take one now—*before* the need

for it arises and you can't spare the time? A course in practical nursing is an excellent investment for any woman, regardless of her age. Many hospitals offer short courses or train people as aides or attendants if they will give some time in return. The Red Cross and other agencies can arrange for something of this nature for a group in your community. Or you can organize it yourself, under the direction of a nurse, for some friends of your own age—whether you're in your teens or later years.

CARING FOR A PATIENT AT HOME

Having decided to care for the patient at home, you should immediately get instructions from your doctor. These may be of a general, even casual, nature. Sometimes we doctors merely say, "Keep Johnny in bed for a few days; I'll be around to see him on Tuesday or Wednesday." In other cases, the directions may be detailed and perhaps complicated.

Always be sure you are clear about the following questions: (1) May the patient go to the bathroom, wash or bathe, sit up in bed, read and talk? (2) What, and how much, may (or should) he eat and drink? (3) What, if any, medicines should he have? (4) How often should you take his temperature (by mouth, rectum, armpit)? (5) What symptoms, if any, should you watch for; and if these appear should you call the doctor? (6) Are there any treatments you should give, such as massage or an enema? (7) Should any precautions be taken for the patient or the family?

Write down the answers to these questions.

GENERAL SUGGESTIONS

Conserve your strength. A pad and pencil, if you make use of them, will be one of your greatest helps. Lists save many trips, and contribute to your confidence, so get in the habit of making them.

Plan everything ahead of time. Assemble all the things you need and keep them in a special place so they will be there when you want them. Make out a schedule of daily care, meals, and so on, based on your doctor's instructions. Before you bathe the patient, clean the room, or bring him a tray, check the supplies you may need so you won't have to go back for them.

Keep records of what you have done. A daily chart should be filled in to record the temperature, medicines, and treatments. Check this against the list of doctor's orders. This will not only make for efficiency, but will keep you from worrying that you have forgotten something.

Save your back. Watch your posture. Stand close to whatever you are doing, and don't stoop, but bend from the knees. Keep your back

straight when lifting. If you are tall, sit on a high stool whenever possible instead of leaning over. Raise the bed to a convenient height by means of blocks or by putting the legs of the bed in cans filled with sand or gravel. If you are short, stand on a footstool or a box whenever you can in order to avoid having to reach for things. Wear low-heeled, comfortable shoes, and sensible clothes that won't bind you, or catch on things, or soil easily.

Newspapers are useful for a number of things. You can make bags out of them for the disposal of soiled tissues, etc., and to protect the bed. But remember, newsprint comes off if it gets wet, so you may need to place a piece of plain paper or some padding under the newspaper.

TECHNIQUES OF NURSING

Some of the things you may need to do in nursing your patient should be demonstrated to you; for example, giving an injection. It is also helpful to be shown how to do such things as making a bed while the patient is in it. Perhaps you can afford to engage a private nurse for a day to break you in. Or a *visiting nurse* can show you. There are visiting nurses' associations in a great many communities. Although the services they offer vary to some extent, they are intended to provide part-time nursing care for patients in their own homes. They are extremely valuable for people who need certain treatments and attentions which only a trained nurse can give, but who do not require, or cannot afford, a full-time nurse. As these associations are usually a part of the community fund, their charges are geared to the patient's ability to pay, being available even to those who have no money.

Although there is nothing like being shown, the following procedures should be clear to you from these instructions and illustrations

In choosing the patient's *room*, remember that you'll have to go to him often, and fixing up a room on the ground floor, for example, may save you a great many trips up and down stairs. See that the bed is placed in the best position for you and the patient—not too close to the window or radiator for his comfort, with adequate light that doesn't glare in his eyes, and near a table for your, and his, convenience. This table should be large enough to hold the things he is apt to need or want, such as tissues, a glass of water, something to read, and a bell to let you know he wants you. If you have no bell, an empty glass can be struck with a spoon.

Keep the *temperature* of the room as even as possible, around 72 to 76 in the daytime, 68 to 72 at night. A wall thermometer near the patient will help you to check this. If you use a heater, remember that some of these consume oxygen (see page 4). Be very careful not to

put it too close to the patient where it could burn him or set fire to the bedding. Hot-water bottles or heated bricks can be used to provide additional warmth (see page 514).

To *ventilate* the room without creating a draft, open the window from the top, or place a screen or blanket over the back of a chair, by the window. You can also open the window in the next room and leave the door between the rooms open. If the *air is too dry*, put a large, shallow pan of water on or near the radiator, or purchase a humidifier.

To keep the patient from *falling out of bed*, place a kitchen chair with its back against the bed, or tie a row of chairs together and put them with their backs to the side of the bed.

You can improvise *bed tables* on which to serve meals, etc. Try setting up the ironing board so that it extends over the patient's lap when he is sitting up; or put a chair on each side of the bed and rest a board on them. You can also make a table by removing the ends and the bottom of a cardboard carton, leaving the sides and top, and setting it over his lap.

Illustration 25-1 shows methods of *placing pillows* to make the patient comfortable. To help him sit up, put a card table or a board under

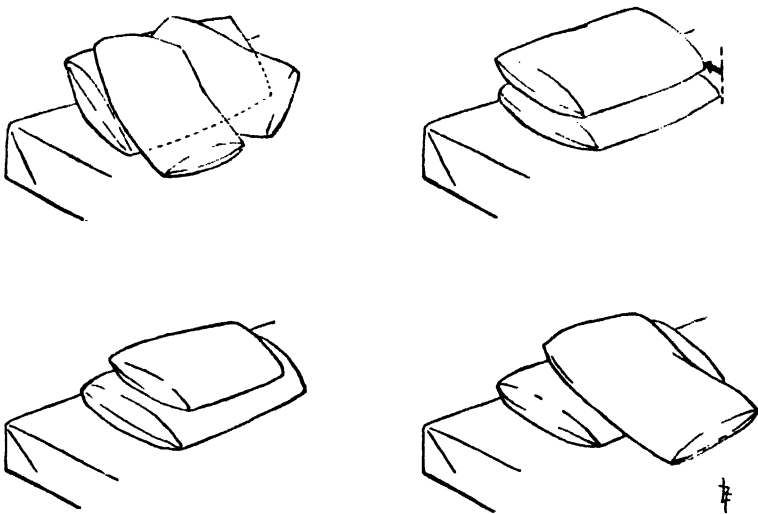


Illustration 25-1. PILLOW ARRANGEMENTS.

a pillow at the head of the bed, tilted at the proper angle, to support his back. If he is lying on his side, he may find that a folded pillow at his back gives some support.

If the patient is *tall*, use a chair with a pillow on it to make an extension for the bed (see Illustration 25-2).

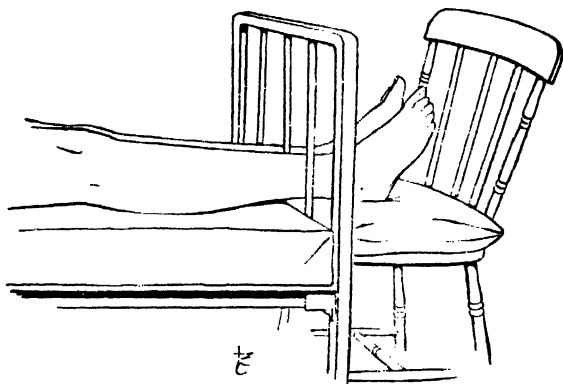


Illustration 25-2. BED EXTENDER.

Chair used to provide extra space for tall patient.

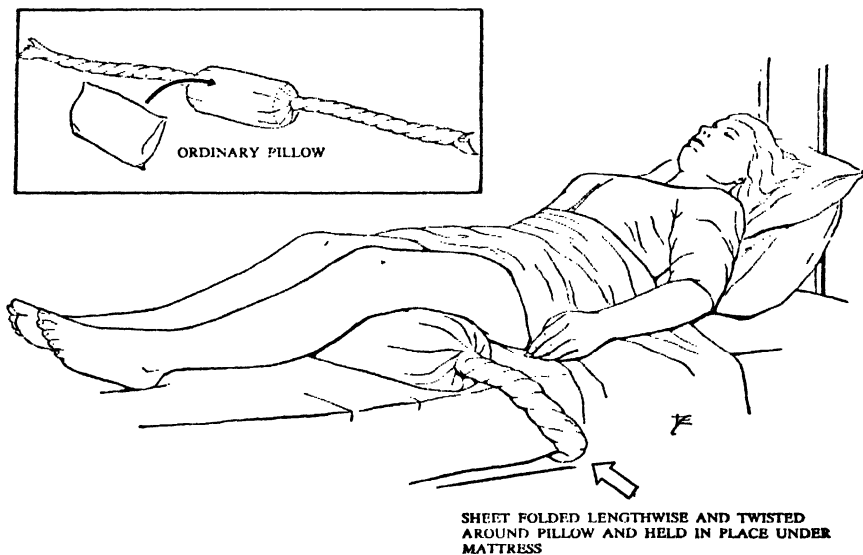


Illustration 25-3. SUPPORT FOR LEGS.

To keep the patient comfortable and prevent sliding toward the foot of the bed.

Keep him from *sliding toward the foot* of the bed by rolling a pillow in a sheet, as in Illustration 25-3.

A pillow under his legs and another at the foot of the bed will also keep him from slipping and will make his legs and feet more comfortable (see Illustration 25-6).

Relieve or prevent *pressure* on parts of the body such as the elbow, hip, heel or ankle by using a "doughnut" cushion which can be purchased or made by rolling some cotton and wrapping it with a bandage as in Illustration 25-4.

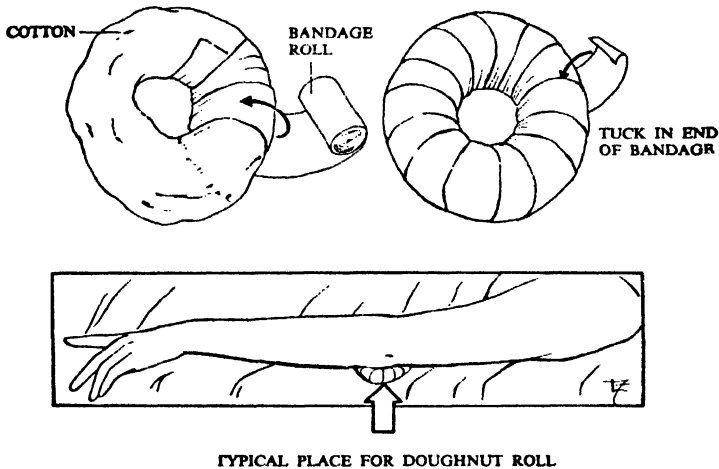


Illustration 25-4. DOUGHNUT ROLL.

To relieve pressure and prevent bed sores.

Illustration 25-5 shows how to roll a blanket in order to *keep the patient's legs from turning out* as they often tend to do, to his discomfort.

Giving him *room to move his feet* will add to his comfort. To do this, place a pillow under the covers as in Illustration 25-6. This will also prevent the weight of the covers from resting on his feet.

Illustration 25-7 demonstrates how to *move* the patient toward the head of the bed if he slips down; how to move him from his back to his side; how to raise his head and shoulders; and how to help him to sit up and get up. Before the patient gets up, have him sit for a moment on the edge of the bed with his legs dangling over the side, because the change in position may make him dizzy or faint.

Hospital beds are made up with the following, in the order listed: mattress pad, bottom sheet, rubber sheet, draw sheet, top sheet, blanket(s), spread, and pillowcases over the two pillows. I feel that, in

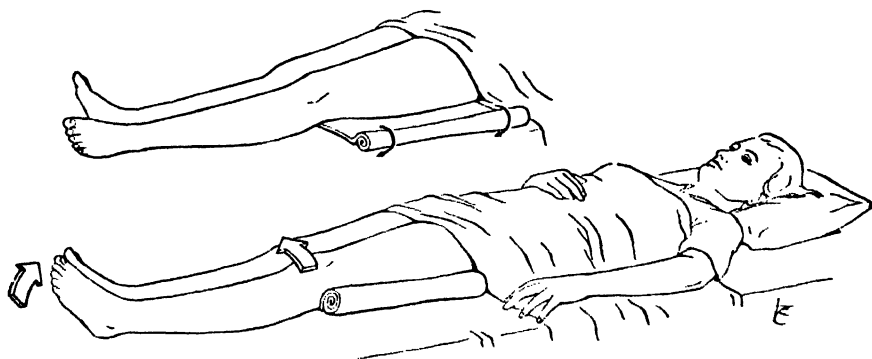


Illustration 25-5. TROCHANTER ROLL.

Rolled blanket supporting the legs and keeping the knees from turning outward.

homes, the rubber sheet should be omitted except when it is really necessary—that is, in the case of small children or other patients who are incontinent (have no control over the bladder and bowels). I know this will sound like heresy to some members of the nursing profession, but a rubber sheet can cause a great deal of discomfort, especially in hot

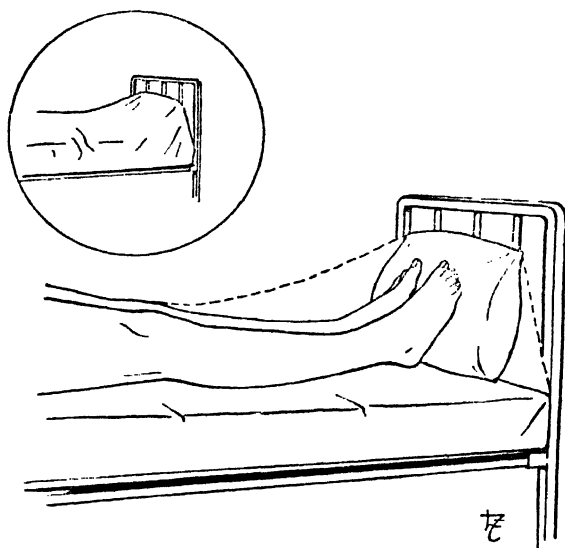


Illustration 25-6. PILLOW AT FEET.

To support the weight of the bedcovers and prevent pressure.

weather or when the bed is made by someone who is not sufficiently experienced to keep it absolutely free from wrinkles. In most cases the pad and the two sheets—the bottom sheet and the draw sheet—will protect the mattress, provided care is taken when placing a basin or anything else that might spill, on the bed. A draw sheet large enough to use double will give added protection if needed.

Another thing which nurses swear by is the squared corner. This is, indeed, essential in making a bed properly. With a little practice you can learn how to make a square corner and pull the under sheet tight enough to keep it from wrinkling. Illustration 25-8 will show you how to do it. Stand at the side of the bed on which you are working, facing first the top and then the foot, and complete one side before going around to the other.

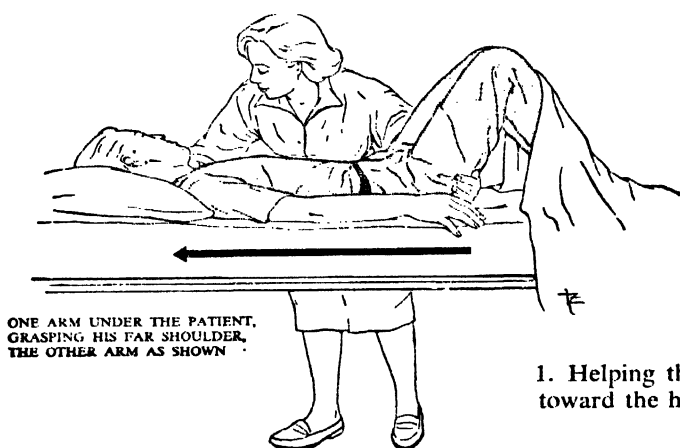
Making a bed with someone in it seems difficult but can easily be learned. Consult Illustration 25-9 and follow these directions without trying any short cuts.

Remove the spread and loosen the blanket at the foot and sides. Reach under it and remove the top sheet, leaving the blanket to cover the patient. Loosen the draw sheet, fan-folding it toward the patient so that it lies close to him, parallel with his body. Loosen the bottom sheet, which you need not remove unless it has become soiled. Smooth the mattress pad and the bottom sheet, and tuck in the bottom sheet, squaring the corners and making certain it is neat and free from crumbs. Put the clean draw sheet on the bed with its mid-fold in the center of the bed, tucking in the side on which you are working. Fan-fold the other half that will cover the part of the bed on which the patient is lying. Put the fan-folded part *over* the fan-folded old sheet.

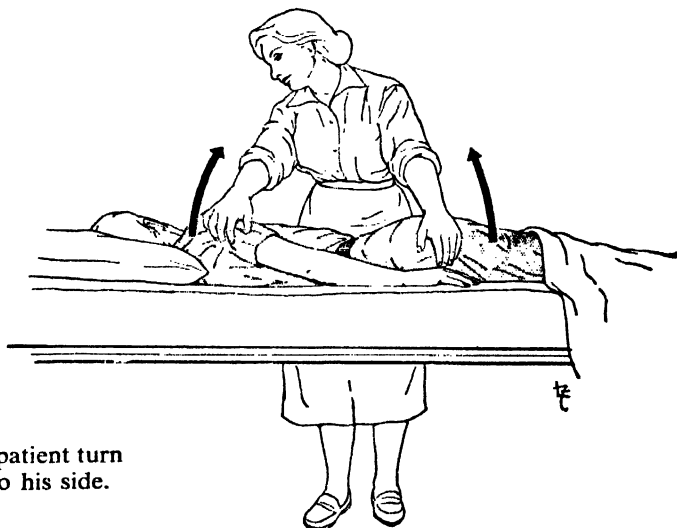
Help the patient to roll toward you over the fan-folded part of the two sheets, so that he is on his side facing you (see Illustration 25-9). Now go to the other side of the bed, and attend to the mattress pad and the bottom sheet as you did on the first side. Pull out the soiled draw sheet over which the patient has rolled, and put it aside to be washed. Next pull the clean sheet, and smooth and tuck it in. Put a clean top sheet over the blanket and remove the blanket while you tuck this sheet in at the foot of the bed and spread it over the patient. Replace the blanket, and “make” the foot and sides of the bed. Then change the pillow-cases, and the bed is finished.

Keeping the patient *clean and neat* contributes to his well-being, but be guided by what the doctor suggests rather than by a fanatical desire for cleanliness. The patient's *hands and face* should be washed, and his teeth brushed, at least twice a day as a general rule. Protect the bedding with paper or a piece of rubber, and a towel while the patient attends to these things himself, if he is able. If a patient cannot wash his

Illustration 25-7 MOVING THE PATIENT.



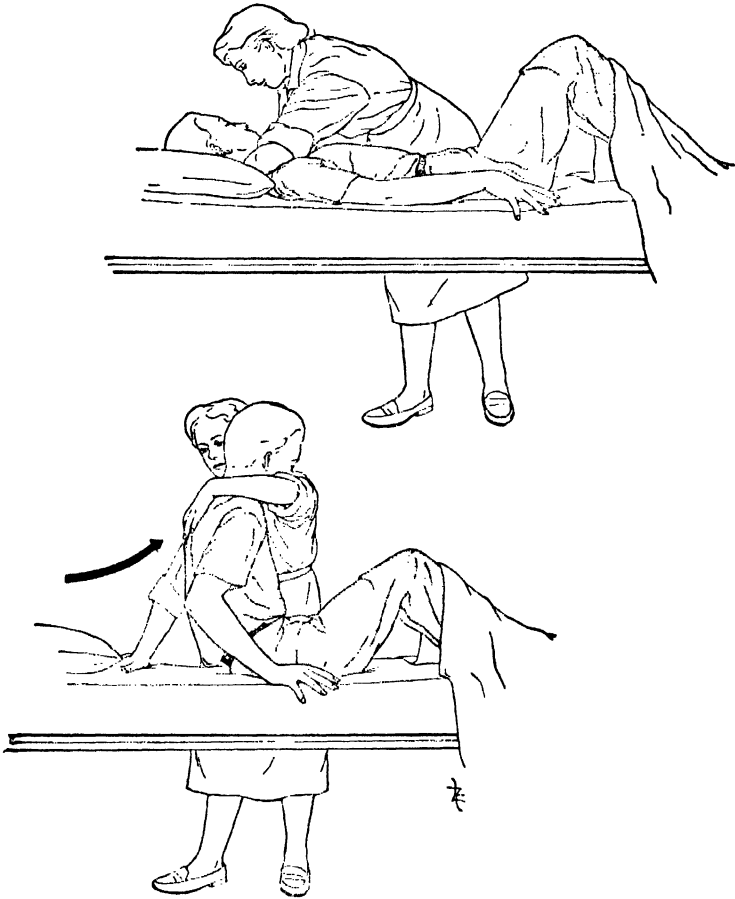
1. Helping the patient move toward the head of the bed.



2. Helping the patient turn from his back to his side.

own hands and face, follow the suggestions I give below (page 511) in describing bed baths.

If the patient is not able to sit up to *brush his teeth*, he may be able to do this by lying on his side with a basin close to him. Make things as easy as possible for him by handing him the toothbrush with toothpaste or powder on it, holding the basin so he can expectorate into it easily, and giving him water in a glass with which to rinse his mouth. If he is not well enough to do even this much, ask your doctor or nurse whether to omit the procedure for a day, or whether to wash his mouth yourself, according to instructions which should be given to you.

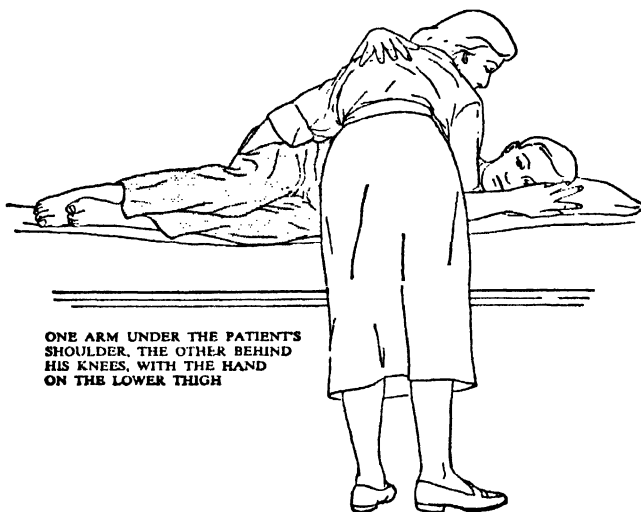


3. Helping the patient to sit up in bed.

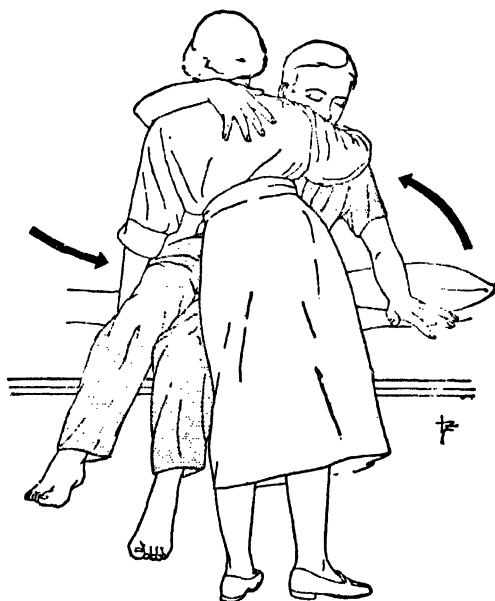
The *hair* should be combed once or twice a day. If the patient is unable to do this, and if the hair is long and snarled, applying a little alcohol usually helps. Comb small strands of hair at a time, holding tight to the strand above the part being combed. Long hair should be braided.

Rubbing his back once or twice a day usually makes the patient feel better and is good for the skin. Use bathing lotion or talcum powder if desired, and rub with long, gentle but firm strokes.

The doctor will let the patient go to the *toilet* at least once a day unless it will actually endanger his health, for doctors know that most patients find it difficult to use a bedpan. A patient who is not able to walk



ONE ARM UNDER THE PATIENT'S
SHOULDER, THE OTHER BEHIND
HIS KNEES, WITH THE HAND
ON THE LOWER THIGH



4. Helping the patient to get out of bed, or to sit up with his feet over the side.

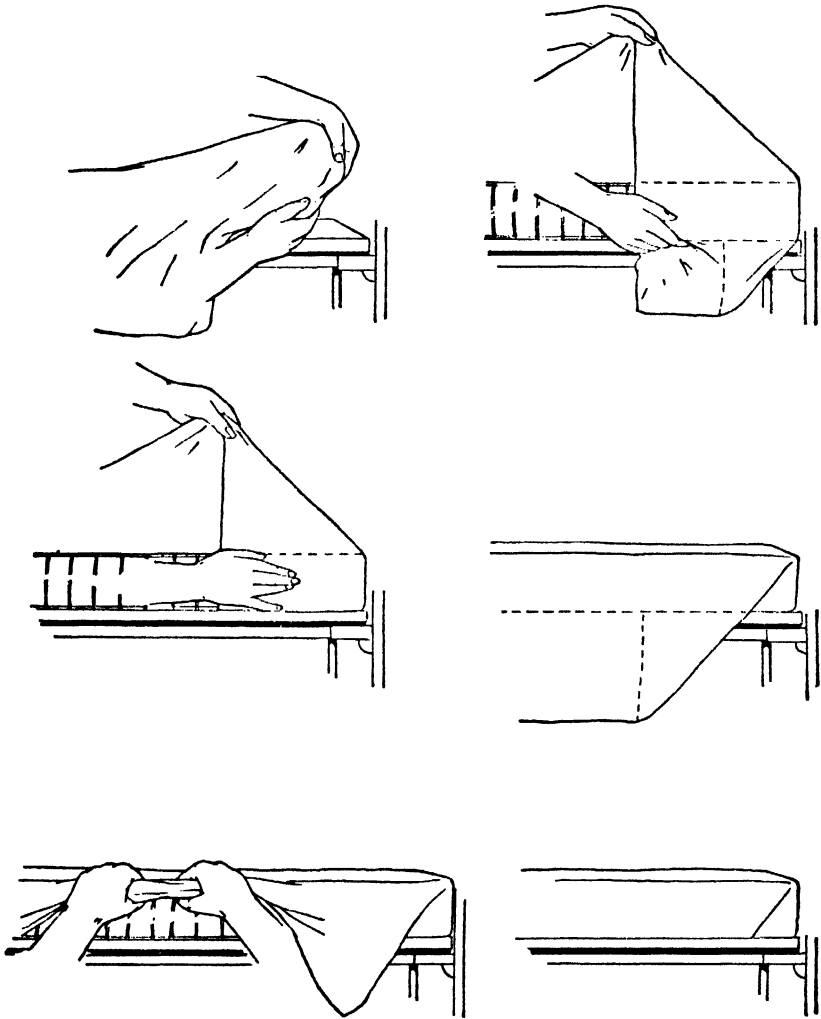


Illustration 25-8. MAKING A SQUARE CORNER.

to the bathroom may be permitted to use a homemade toilet which you can improvise from an old kitchen chair, by cutting a hole in the seat, and fastening a commode under it.

A male patient can probably use a urinal without much assistance if you place it on a towel beside him under the covers. If it is cold, warm the urinal first by putting it on or near the radiator, or by rinsing it with hot water and drying it quickly just before you bring it to him.

A *bedpan* should also be warmed in the same way. Most patients can

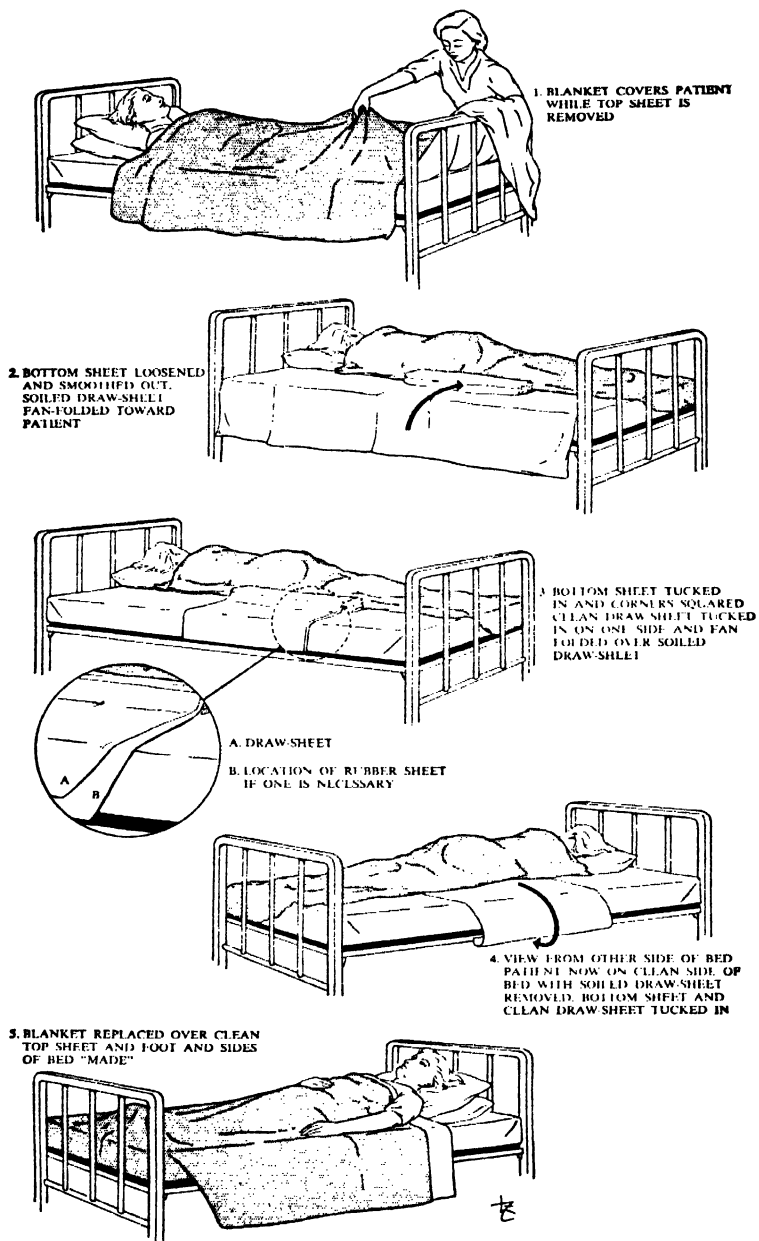


Illustration 25-9. MAKING OCCUPIED BED.

raise themselves, or help to raise themselves, onto it by flexing their knees and pressing with their heels and the palms of their hands on the mattress. The bedpan should be placed under the patient's buttocks, the flattened end of it just below the hip bones (see Illustration 25-10).

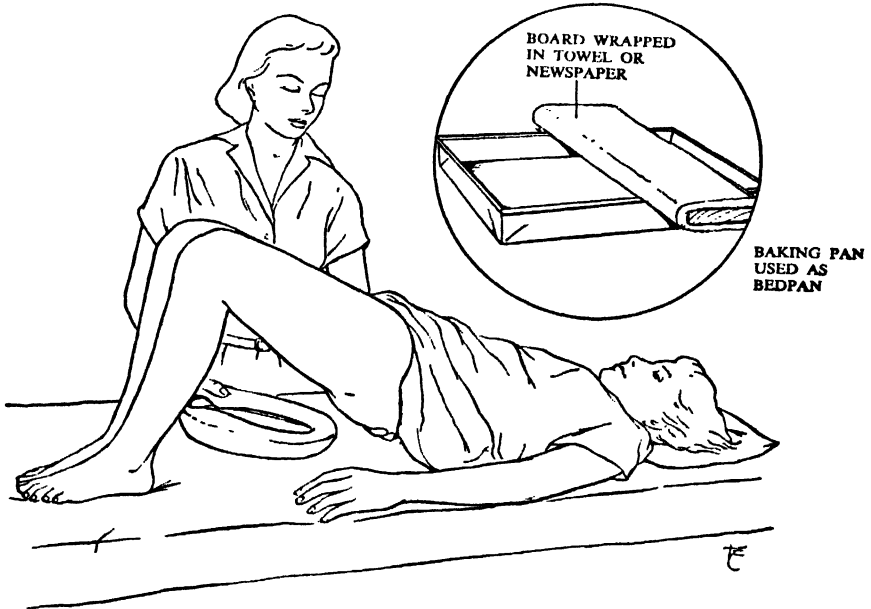


Illustration 25-10. PLACING A BEDPAN.

Cover the patient and, unless he is very ill, leave him alone on the pan with the toilet paper within reach, but remain nearby so you can go to him when he is finished. Remove the pan, covering it immediately with a cloth. After you empty the contents into the toilet, wash the pan thoroughly and rinse in very hot water. Your hands and those of the patient should be washed right after the pan has been used. If you cannot get a bedpan, make one from an old baking tin with a board tied over it. Cutting a half-circle out of the board will make the bedpan more comfortable for the patient. Be careful to protect the patient from rough or sharp edges by padding the board with a cloth or other padding.

If the patient is able to take a *bath* in the tub, be sure to find out how much assistance he needs. Be careful there is nothing on which he can slip or trip, and remain near by in case he needs you.

If the patient is unable to bathe in the tub, give him a *bed bath* as often as the doctor recommends. This should be given before you make or change the bed, and after he has gone to the toilet or had the bedpan. You will need a bath blanket which preferably should be a fairly small

cotton one which is easy to handle and dry, two bath towels, a face towel, wash cloth, soap, and a basin of warm water, and clean pajamas or nightgown. Change the water at least once, especially if it gets cool.

Remove the top bedding, cover the patient with the bath blanket, and remove nightclothes. Protect the under bedding with a towel, placing paper under the basin when you put it on the bed. Let the patient wash his own hands and face if he is able; if not, start with the face, drying it before you go on to the neck and ears, and always rinsing off the soap carefully if you use any. Next wash and dry one arm, and wash the hand in the basin. Then attend to the other arm and hand. Now wash and dry the chest and abdomen. Turn the patient on his side to wash his back and buttocks, drying thoroughly and applying bathing lotion or talcum if desired (always protect the sensitive genitals and scrotum from alcohol lotions). Turn the patient on his back again and put on clean night clothing, making certain it is folded back so it won't get wet while you wash his legs and feet. Place the basin near the foot and wash and dry one leg, starting with the groin and ending with the toes. Then wash the other leg and foot. The patient should wash the genital area if he is well enough; if not, attend to it last, and then remake the bed.

It is not very difficult to *wash short hair* without wetting the bedding. If the patient is a woman who is going to be confined to bed for some time, try to persuade her to have her hair cut short.

The secret of success in washing even long hair without wetting the bed lies in making a "trough" out of a rubber sheet, covered by a bath towel. Roll both sides and one end of the rubber, leaving the center portion flat, and the unrolled end hanging into a basin on a chair that is lower than the bed. Put a bath towel over the rubber sheet, molding it into the same form. One rolled side should be under the patient's neck and the other beyond the head, the patient lying with her face turned away from you. Give her a clean towel or cloth to protect her eyes. Wet the hair from a pitcher of quite warm water, apply liquid shampoo, rub hair and scalp with your hands, rinse, and then rinse once again. Use a towel to rub the hair dry, if a dryer is not obtainable.

There are shampoos on the market which can be used to "wash" the hair without water. However, it is risky to use one unless the patient has tried it while she was well because she may be allergic to it.

To give *water or other fluid* to a patient who is unable to sit up and drink by himself, raise his head, either by means of pillows or by slipping your left arm under the pillow and lifting it while you hold the glass in your right hand. Have the glass less than half full so it won't spill. Bent or flexible drinking tubes which can be obtained in most drug stores are very useful for children and patients who are too ill to drink easily.

Always hold the glass and tube for the patient, and make certain that the tube is always *in* the liquid so that the patient won't suck air.

Medicines should be given from a spoon or glass, or in the form of pills or capsules, as directed by the doctor or the visiting nurse. Always check the bottle or container before giving the medicine and again afterward.

I describe how to take the *temperature* by mouth, rectum, and armpit, on page 408.

If the doctor wants you to take the patient's *pulse*, try to practice it on a well person, since you may require a little practice to get the knack of it. Place the tips of two or three fingers—not your thumb because it has a pulse and you are apt to count your own pulse if you use your thumb—on the artery just inside the wrist and below the patient's thumb (see Illustration 25-11). Press hard enough to feel the pulse, but don't press too hard or you won't feel anything. Count the pulse for a minute,

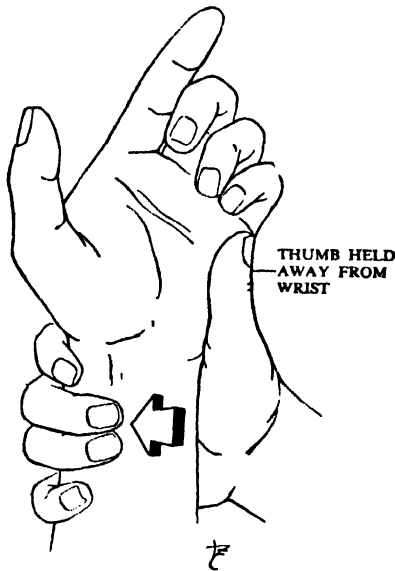


Illustration 25-11. TAKING THE PULSE.

using a watch with a second hand for accuracy. The patient's pulse should be taken when he is relaxed, and not right after he has exerted himself. Write down the number of beats you have counted, and whether the pulse seemed strong, weak, regular, or irregular.

If the doctor wants you to take the patient's *respiration*, try to do so without letting the patient know it. It is often difficult for the patient to

breathe naturally if he knows he is being watched. Look at the chest for exactly a minute, counting each time you see it rise.

Don't give an *enema* unless the doctor tells you to. He will also tell you what to give, and other directions such as how long the enema should be retained.

Have the patient lie on his side, his back toward you, and his legs flexed—the upper one more so than the lower. Be sure the bedding is protected. Test the water with a thermometer (it should be about 105°) or by letting a little of it run on your arm to make certain it is not too hot. With a piece of toilet paper, apply petroleum jelly to the rectal nozzle at the end of the tube. Open the stopcock and let some water run out into the bedpan to make certain there is no air in the tube. The patient should insert the nozzle himself if he is able. If not, insert it very slowly and gently for about two inches, pause a moment and insert another inch or two. Don't hold the bag too high—about 18 inches above the bed, as shown in the illustration. Lower it if the fluid flows too rapidly, or pinch off the tube to stop the flow if the patient complains of pain. When the bag appears empty, remove the tube carefully, and place the bedpan under the patient.

A *hot-water bag* can be used to provide heat if the patient is cold or if the doctor orders it for treatment of an affected part. Be certain the bag is in good condition; always hold it upside down for a minute after

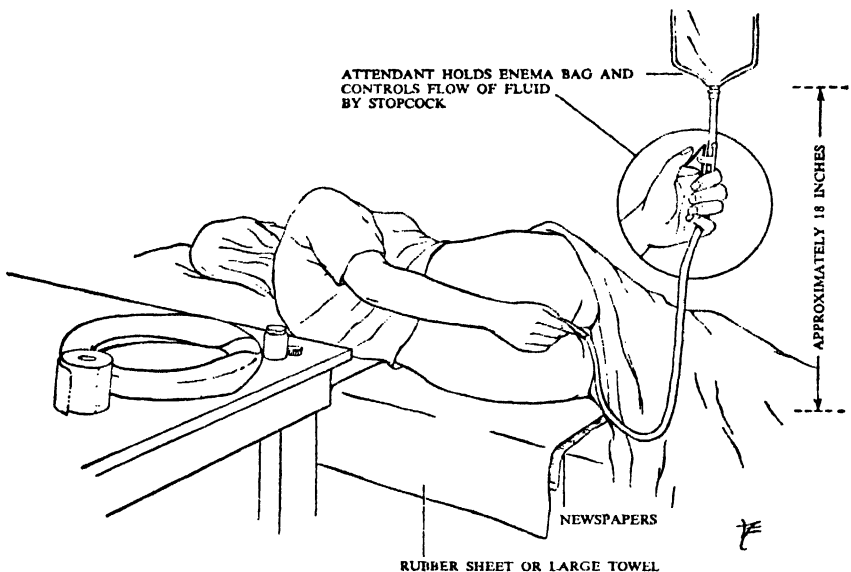


Illustration 25-12. GIVING AN ENEMA.

it is ready to take to the patient, to make certain it doesn't leak. Fill the bag about two-thirds full with water at 130° for adults, 120° for children. Expel the excess air before you put on the lid. Wrap in a cloth. Be sure to check with the patient to make certain the bag is not too hot for comfort.

The doctor may order *hot moist applications* to an affected area. To keep from burning your hands while you wring out the gauze compress, put a turkish (bath) towel across a small basin, not too near the patient, and place the compress in the middle of it. Pour on very hot water. Grasp the dry ends of the bath towel and twist in opposite directions until no more water can be wrung out. Untwist the towel and lift out the gauze compress with your fingers; if you can't pick it up, it's too hot for the patient. Place on the affected area and cover with a dry towel to keep in the heat. Change when it becomes cool, or as often as the doctor directs.

If the doctor orders an *ice bag* (or an ice "collar") to relieve pain or inflammation, be sure to check it as I described for hot-water bags, to make certain it doesn't leak. Crush the ice so there will be no sharp edges, and fill the bag no more than half full. Dry carefully and put a cover over it before applying it to the affected area. Keep the patient from getting chilled by putting an extra blanket over him, if necessary.

* * *

The procedures which I have described above will more than cover the care needed by most patients. However, the problems which patients present vary according to the kind of illness, the age of the patient, and so on. I shall describe three types of cases to serve as a general guide.

IF YOUR CHILD HAS A COMMUNICABLE DISEASE

In caring for a child with a catching disease, you must protect others from it, including yourself unless you *know* you are immune. Even then, it is best to play safe because many immunities are not life-long, and you want to make absolutely certain you, too, do not contract mumps, chicken pox, or some other childhood disease.

Precautions vary in different diseases, and health-department regulations also vary. In general, the following minimum precautions should be observed.

PRECAUTIONS

First, for your general information concerning communicable diseases, read Chapter 7 on Keeping the Germs Away (see page 169).

Since people, rather than things, spread most diseases, keep the patient away from others and others away from him as long as your doctor says it is necessary. If you have other children, be particularly careful not to let them go into his room. Because they were probably exposed to the disease while he was coming down with it, ask your doctor about protective "shots" (see page 175).

Many diseases are spread by the saliva, so: (1) Leave a smock or long apron in the patient's room and slip it on over your dress while you are with him. (2) Turn your face away when he coughs or sneezes. (3) Keep your hands away from your mouth. (4) Wash your hands *thoroughly* with soap and very hot water when you are through caring for him. (5) Masks over mouth and nose should be worn only at the doctor's request. Masks may frighten sick children.

If he is too sick to do it himself, place all used cleansing tissues in a paper bag, which can be pinned to the side of his mattress, and then either burn it or shake the contents into the toilet. If you must use handkerchiefs, handle them as little as possible; boil them in a pot or pail kept for that purpose before putting them in the wash. In most children's diseases, the patient's linens can be washed with those of the family, provided there is plenty of very hot water; so can his dishes.

Special precautions are required for diphtheria, polio, scarlet fever, smallpox, typhoid fever, and dysentery, if you must care for someone with one of these diseases at home.

After the child is well, clean the room thoroughly, air it, and put the blankets, mattress, books, and other objects in the sun for a few hours. All badly soiled articles should be cleaned or destroyed.

CARING FOR YOUR CHILD

Your doctor will tell you whether he may be allowed to go to the toilet or whether he should have a bedpan. It is usually safe to carry a child to the toilet if you keep him warm.

Most children sleep a great deal and are generally "good" when they are very ill. When they begin to recover they become restless. The main problem then lies in keeping them reasonably contented without letting them overdo things. Remember that a child can use up a great deal of energy fussing and crying. Be as flexible as you can about the things that are not absolutely necessary. For example, don't make hair-brushing a painful procedure, even if it means making do with a lick and a promise, or cutting out a snarl.

The child will probably expend less energy on a favorite play toy than he would by tossing restlessly about. Why not get a box of "sick-time toys" and keep them for the illnesses that are bound to come? Keep

them "special" so it will be a treat for the child to play with them. They could include a "sick" doll or teddy bear in night clothing, some toy animals to be lined up on the bed table or bed, some of mother's costume jewelry.

Put the family radio in the child's room, perhaps for part of the time, but avoid letting him listen to highly stimulating programs. Special records on your own or a borrowed record player will provide entertainment. Picture books are good when he is well enough, but don't let him tire his eyes while he is feverish. If he has measles, be especially careful to protect his eyes from glare, perhaps by means of a visor or eye shade, but don't keep his room dark. Most children like to be read to in a calm manner even if they don't always follow the story. Don't let him have any visitors who will excite or upset him.

Use your ingenuity—you'll have to, because you probably have only a limited amount of time to spend with your child. You will find that you actually spend less time with him if you go to him voluntarily than if you wait for him to call. A child often invents reasons for needing his mother simply to be reassured that he has not been deserted or forgotten. Devote some time to him, not just to caring for him. He will require less unnecessary "care" in that way. Never blame him for his illness. This is not the time to drive home any lessons about wearing his rubbers the way you told him to.

It will require a great deal of ingenuity to get most sick children to take the proper nourishment and the essential fluid. Most of them like to use straws, especially colored plastic ones, or a bent glass tube, some of which come in fancy styles for children. Keep them for illnesses and they will be a treat. Check with your doctor to learn how flexible you can be about the child's food and fluids. Your child may prefer ginger ale or fruit juice to water. Some chocolate or vanilla flavoring may make milk more acceptable. He may be delighted to be allowed to drink coffee, perhaps iced coffee. (This can be made by adding some instant *caffeine-free* coffee—Sanka—to milk or water.) Ice cream or sherbet goes down a sore throat easily—or a milk shake, or a soda made with flavoring, milk, and charged water to which some ice cream can be added. Custards, too, go down smoothly, supplying essential minerals and a large number of calories. Sometimes a child who feels too sick to eat, especially if his throat is very sore, will enjoy lollipops or old-fashioned rock candy, also high in calories.

Many sick children become "younger" in their taste for food while they are ill. That is, they tend to like the things they formerly enjoyed but have outgrown. They are apt to eat better if food is served in small, rather than large, quantities.

Aspirin is now put out in chewing gum and candy forms. These are

more acceptable to young children (but also become an increased hazard from poisoning; be sure to keep your aspirin supply in a place where children cannot get at it). Other unpalatable pills can be ground up in a spoonful of jelly or applesauce. Giving a piece of candy immediately after the medicine will make things easier.

In Chapter 20 (page 406) I discuss the various common fevers and illnesses of childhood, and in Chapter 19 I deal with the emotions of children. Both these chapters will be helpful to you if you have a sick child to care for.

CARING FOR AN ADULT WITH A SERIOUS, NONCONTAGIOUS DISEASE

In caring for an adult with, for example, a heart condition that is expected to clear up in six to twelve weeks, you will have need of some of the more difficult (as well as the easier) nursing procedures I have described, such as giving the bedpan, and changing the bed with the patient in it. As the patient recovers, you will have to help him from his bed to the chair, assist him in walking, and do many other things that present no problem in the case of a small child.

One of the prime requirements in caring for an illness of this type is to keep the patient from becoming anxious or alarmed. To do this, you will need confidence and skill in handling him. The best suggestion I can make is this: as soon as your doctor tells you what you have to do, try it out on someone other than the patient—foolish as this may make you feel! It will not only give you confidence, but it may enable you to reassure the patient by saying something to the effect that, "The doctor (or nurse) showed me how to do this, and I practiced it on Mary until everybody says I'm as good at it as any professional."

Nothing is more important than providing a calm, sympathetic, and cheerful atmosphere. Skill in handling nursing procedures will help to create this. So will a good, regular routine. Although they may not realize it themselves, most sick people benefit a great deal from having things happen according to schedule. Naturally you should try to be flexible about this routine if the patient wishes.

Be sure to keep even petty disturbances away from the patient. This may mean that you have to be rather dictatorial about visitors.

Remember that a sick adult is in many ways like a child. He, too, senses tensions and needs to feel secure, so that many of the suggestions I made in regard to caring for a sick child will apply to a sick adult. For example, look in on the patient even though he has not called you be-

cause *loneliness* can be more tormenting than pain in long illnesses.

In serious illnesses, especially if the patient is getting along in years, his position should be changed frequently to prevent bedsores and avoid the possibility of pneumonia.

You should read about the specific disease from which your patient is suffering. (You can find it by consulting the Index.) But *don't* become an "amateur home doctor." Your patient may try to put you in this position by discussing his symptoms, and asking your opinion as to whether he is better or worse. Guard against this from the very beginning because your patient may think he is worse if you stop answering questions at any point. Work out a way of coping with this from the first. Find some noncommittal but unalarming answers, such as: "The doctor asked me to write down any symptoms (or questions, or complaints) and take them up with him," or, "The doctor said that was a usual thing in this kind of illness," or "He gave me a list of things to check on, and if they're all right—which they are—he said I needn't call him," or "I have no reason for thinking this means anything, but the doctor asked me to report everything that happens so I'll call and tell him about it."

Above all, try to make things as pleasant as possible for the patient: his meals, his little "entertainments," and, most important, his nurse (which means you).

CARING FOR AN ADULT WITH A CHRONIC DISEASE

Let us say, just for an example, that you must care for your mother whose severe arthritis will require her to stay in bed for six months or more. After checking with your doctor, you are apt to find that you, too, should practice some of the nursing procedures he recommends. Naturally you will need to follow some of the suggestions I made regarding the care of sick children and adults. But your main problem is a little different; it consists in finding additional ways to keep your patient from being injured physically and emotionally by her long stay in bed.

A good hospital or nurse will insist that bedsores need not occur, and that they can be cured. It is very much easier to prevent them than it is to cure them. Be sure that you (1) See that your patient's weight is distributed as evenly as possible instead of being (for example) entirely on the buttocks. (2) Keep the bed free from wrinkles; dispense with rubber sheets if possible—and it is almost always possible. (3) Move your patient frequently. (4) Keep the skin dry and clean; use a little alcohol as a rub after bathing, and talcum; give alcohol rubs. (5) Use

rolls, or ring or doughnut cushions to keep the weight off vulnerable spots such as the hip and ankle bones the minute you discover the skin is at all red. Let the air come in contact with such spots for a little while every few hours. (6) The smallest sore should not be ignored in the hope that it will go away. Get your doctor's advice and follow his directions exactly.

The patient's *morale* is just as susceptible to emotional bedsores. Your attitude and the atmosphere you create can be excellent preventatives. But the chronically ill patient may still be chafed by the monotony of the necessary routine.

Be sure to keep this routine from becoming depressing by varying it to make room for little treats and small surprises—perhaps by using the “company china” for Sunday dinners, or a flower to wear on her bed jacket on Saturday night, or something special in the way of food or drink. Remember that the patient who must stay in bed for a long time needs to do things, not only for his or her own entertainment, but in order to feel useful. Persuade him or her to do something as a favor to you, something that will help you, such as a regular story-telling or reading period for the children, or helping with their homework, or peeling vegetables, or making something for the house or for future Christmas presents. *Never* let your patient know that it would be easier for you to do these things yourself. Even if it would, it is good for you to get some of the routine jobs off your hands. More important, it will pay off eventually, if only by giving you a happier and less demanding patient. In other words, one of the best pieces of nursing care you can give a chronically ill patient is to make a place, however small, for him or her in the home life of the family.

HELP FROM OTHERS

In most cases of illness, you can get some help if you need it—and you often do. Find out what is available in your community through your doctor, clergyman, or social agency. You may need a visiting nurse for an hour every day or once a week, or an absolutely reliable “sitter” on certain occasions. Perhaps your patient would benefit by some of the services which various agencies (see page 587) offer in different kinds of illnesses, e.g., a visiting teacher or some school work by mail for a partially disabled or slowly convalescing child, or training in some art or craft for a bedridden adult, or a correspondence school course in some subject you never suspected would interest your patient! Many people with long-lasting or chronic diseases have been helped to find money-making as well as entertaining projects.

Do not be reluctant to accept help if you cannot afford to pay for it and it is available free, or partially free. The burden of caring for a sick person is heavy enough without adding false pride to your load. It is also false economy to try to do so much yourself that you, too, become ill, or are unable to give the best care to your patient.

PART FOUR

**YOU AND YOUR
DOCTOR**

Your Doctor

EVERYONE NEEDS A DOCTOR

EVEN THOUGH you may be one of those rare and very fortunate people who can honestly say, "I've never been sick in my life," you should nevertheless have a doctor. Your perfect health is no guarantee against many contagious diseases, appendicitis, cancer or accidents, which can cost you your life if you delay too long in getting medical assistance—as people often do when they do not have a physician to whom they can turn. Regardless of your state of health you surely don't want to gamble, either for yourself or your family, on the chance that no emergency will ever occur. Besides, you need a doctor to help you *keep* your good health, especially as you grow older.

If, on the other hand, you are like most of us and suffer occasionally from ordinary ailments such as the "flu," there is an additional reason for you to have a doctor. His help is essential in preventing these illnesses from developing into something serious, like pneumonia. And if you are one of the less fortunate individuals who suffer from a chronic illness or general poor health, don't resign yourself to the idea that "Nothing can be done about it anyway." Tremendous advances have recently been made and are being made today, both in the prevention and cure of disease; and *everyone needs a doctor* in order to reap the full benefit of modern medical discoveries.

If you do not have a doctor, select one now. Don't wait until you or a member of your family develop appendicitis, pneumonia, or some other serious illness. Your doctor will be the central point of your health program, ready to take care of all your medical problems—including emergencies. He can handle them far better if he knows you and your physical condition beforehand.

You want to know him, too; in fact you want to know a good deal about him before you select him to be your doctor. All physicians aren't alike; in medicine, as in other professions and trades, some men have more skill and better training than others. There is a tremendous difference in the quality of medical school education and subsequent hospital

experience of various doctors. It is risky to select a man for your family physician on the casual recommendation of a friend, or because his office is conveniently located in your neighborhood. Your health is too precious to trust to anyone but a very competent physician. (There are excellent women doctors today, and whether to select a man or woman is a matter to decide according to your own preference.)

FAMILY PHYSICIAN

The first step is to decide what type of doctor you will need. You want someone whom you can call if illness strikes any member of your family; someone who will suggest a specialist if he himself cannot handle a condition adequately. You don't want too specialized a doctor for your family physician because he is concerned only with that branch of medicine for which he has specifically trained. An ophthalmologist, for example, would not treat your bronchitis, nor would he be expected to diagnose heart disease; he has obtained very special training to fit him for diagnosing and treating troubles of the eyes.

That is why you should choose a *general practitioner* or an *internist* for your family doctor. The *general practitioner* is trained to take care of most adult illnesses and to do a certain amount of surgery; also, he may deliver babies, take care of infants and children, and set broken limbs. The *internist* is more specialized; his field is medical diagnosis and treatment; he handles most medical conditions but does no major surgery, perhaps no surgery at all. A good internist or general practitioner will realize when his knowledge is not sufficient to cover a certain problem, and will call in a specialist or refer you to one. Although you may have needed a certain type of specialist in the past, you and your family should have *one* physician upon whom you can *all* rely; and the general practitioner or internist is best qualified for this position.

A good family doctor is not the quaint, old-fashioned character that some books and movies have portrayed him as being. On the contrary, he will always be eager to learn of new scientific developments in medical and surgical practice. This he will assuredly have the opportunity to do if he is a member of any of the medical societies, especially the American Medical Association.

He will capably and skillfully perform periodic examinations, using all the facilities necessary to make a proper diagnosis of your condition, so that you won't discover an illness after it is too late to do anything about it. He will not hesitate to consult other physicians or to call upon a competent specialist if it is necessary, for a wise physician knows

his own limitations, realizing that medical knowledge is so complex no one doctor can master it all. (By all means cooperate with your doctor if he suggests that he needs the help of a specialist or consultant, or the special facilities available at a medical center. On the other hand, you have the right to tell him you would be happier about his diagnosis or his decision to operate—or any problem that has arisen—if his opinion were seconded by a specialist. If *you* select the specialist, make certain he is acceptable to your doctor. It is proper and sensible to discuss the specialist's fee with him directly, or through your own doctor.)

A good family doctor will be able to help you with problems of an emotional nature. If you or your family must go to a hospital he will choose one approved by the Joint Commission on Accreditation of Hospitals (see page 559). He will check up on pharmacies and suggest one where you can get your prescriptions filled safely and efficiently. He will know how to get a competent nurse and any other special type of medical service you or your family may need. And because he is a good doctor he will have a high standing in his community as a man of integrity and skill.

By now you are probably asking, "How can I ever find such a physician?" This is how I advise you to do it:

HOW TO FIND A RELIABLE DOCTOR

1. One of the best ways to find a competent doctor is to consult a relative or close friend who is in the medical profession. He can generally suggest one or more good doctors who could serve as your family physician. Dentists, medical students, pharmacists, and medical and social workers may also be worth consulting. They have a better chance of getting accurate information for you than the average lay person has. Clergymen, lawyers, and judges may also be able to obtain this information.

2. If there is a medical school in your community you can secure a catalogue of its faculty by writing to the dean of the school. For your family doctor you will most likely want to choose someone in the Department of Medicine (the others will probably be too specialized). On page 537 of this book the names and addresses of American medical schools are listed.

3. Another way to find your family physician is to write or telephone the superintendent of a local hospital approved by the Joint Commission on Accreditation of Hospitals (see page 560). The superintendents of these hospitals will be glad to send you a list of the men on their hospital

staffs. Incidentally, a physician's appointment to a hospital indicates approval of his ability, for a good hospital will not staff a man who is not competent. Furthermore, a hospital keeps the doctor in contact with changes in medicine and with the facilities of the laboratory, modern equipment, and new ideas.

The amount and quality of training that a doctor has had after graduation from medical school is an important indication of his ability. Almost every physician has had at least one year's hospital training. The best doctors now take two, three, or even more years of hospital work before entering practice. If a doctor has been graduated from a good medical school and has trained at one of the good hospitals in the country, you can be quite certain he is capable of rendering the service you want.

Make certain the doctor you choose is on the staff of a good hospital. Many people do not realize that fully one-third of the doctors in most large cities cannot admit their patients to the best hospitals. Ask your prospective doctor what hospital he would send you to, and make sure it is a recognized, accredited institution.

4. You can obtain a list of licensed physicians from your county and state medical societies or from the American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois. The American Medical Association is a national medical society maintained to set standards for the medical profession. It also exposes impostors in the field of medicine.

The American Medical Association and the county and state medical societies require ethical conduct from their members. In addition they provide postgraduate instruction for physicians to keep them informed of new medical trends. These societies also meet from time to time to discuss developments in medicine, and they publish journals containing the latest medical information for the benefit of their members.

5. Your board of health or the county health officer can also advise you in your selection of a doctor. They might be especially helpful if you live in a rural area some distance away from a large hospital or medical school.

6. If you move from a community where you have had a physician in whom you have confidence, you can ask him to help you find a doctor in your new community. Often he can do so by communicating with physicians he knows in or near the locality to which you have moved.

Let us assume you have obtained the names of several reliable physicians by consulting one or more of the above sources. The medical societies, hospital superintendents, health officers, and medical schools obviously cannot recommend any one doctor. They will list the men who have had adequate medical training, but

THE FINAL CHOICE RESTS ON YOUR OWN DECISION

Your final judgment should be based on how you, personally, feel about the man. Go and talk to him—professionally, not at a social gathering. Would you find that embarrassing? Then make an appointment for a medical checkup—it is probably long overdue anyway. This won't commit you to him for life, and it will give you the opportunity to get an impression of him in the role you may want him to assume permanently. Do you think you can develop a warm, *confident* personal relationship with him? This is most important since you must be willing to respect and follow his advice in serious decisions, perhaps even matters of life and death. Do you think you could like him? Naturally you don't expect him to resemble a Hollywood movie star, and you don't really care whether or not he voted for your choice in the elections; but you do want to feel easy and comfortable in his presence, so you can talk to him about emotional problems if they should arise. Above all, *does he inspire confidence in you?* You are not looking for the ideal man, but for a doctor you can trust.

“Honor a physician with the honor due unto
him for the uses which ye may have of him”

—Ecclesiasticus

HOW TO DEVELOP A GOOD RELATIONSHIP WITH YOUR DOCTOR

So you have decided upon your doctor. What do you do next? First, don't wait for an emergency or serious illness before giving him the opportunity to become acquainted with *all* the members of your family—their general condition and their medical history. Arrange for a complete examination of everyone in your family. You may also want to arrange for a checkup once a year or every two or three years depending on your doctor's recommendations. The exact intervals can best be judged by him and will depend on your age and medical history.

It will do no good, I might add, to select an excellent doctor if you are not going to cooperate with him. Your part is important, too. When you are consulting him you must tell him everything, no matter how insignificant it may seem. Only in this way will he be able to determine your ailments and find the cure. In addition, always tell him what the school doctors and nurses have reported about your child's health.

When you give him information on the telephone, talk clearly. Avoid

diagnosing your own illnesses and taking your own remedies—patent medicines and the like. When you are ill, call him and follow his directions exactly.

Here's a word to the wise: As a busy doctor myself I know that many physicians do not have the time to point out all the incidental pieces of information that may concern you. Furthermore, a doctor is often reluctant to advance some information himself although he would be glad to give it if asked. So ask your doctor specific questions such as which pharmacy *he* would use to have a prescription filled, or which surgeon *he* would select if he were going to have a major operation, or whether *he* would recommend Dr. ——— to deliver his own children.

F E E S

Patients are too sensitive about discussing fees with doctors. There is a financial side to the practice of medicine, and we doctors want to work it out satisfactorily both for our patients and ourselves.

It is best to ask your doctor about his schedule of fees. Physicians generally have a stated rate for home calls during the day and increased fees for late-at-night visits. In suburban and rural areas they frequently have to charge not only for the time involved in your examination but also for the distance they must travel to see you.

The first office visit, if it is part of a complete diagnostic work-up or health survey, will generally cost you considerably more than subsequent visits. Make sure you understand the charges in advance. Also inquire of the secretary or the doctor about the preferred method of payment—by cash or mailed bill.

If an operation is recommended, ask your doctor what the surgical fees will be and also ask him to obtain an estimate of all the hospital costs. Then you can find out what proportion of these costs will be covered by your Blue Cross and Blue Shield, or other insurance plans you may belong to (see page 582). In this way you will have a realistic preview of your medical expenses.

WHAT TO DO IN AN EMERGENCY WHEN YOUR DOCTOR IS OUT OF TOWN

Be sure you understand who covers your doctor's practice when he is away or unable to take your call. If you cannot reach him or his substitute and you need help at home urgently, telephone your local medical society or department of health, and they will recommend someone who

can help you quickly. In many communities the local medical society maintains a panel of doctors who take emergency calls. If there is a situation requiring immediate attention and you cannot locate a doctor fast enough, ask the police to help you get to a hospital or to send you an ambulance.

WHAT TO DO WHEN YOU NEED A DOCTOR AWAY FROM YOUR COMMUNITY

If you become ill when you are away from home, or get hurt in an accident, it is important to check before accepting medical care. Have a long distance call put through to your own doctor. Let him arrange things for you. In general, remember that many doctors keep lists of competent physicians in other communities. If they do not know a particular doctor they can locate names of qualified specialists from their national directories of specialists, or can refer you to a good local hospital. Make certain your own doctor knows about any serious illness or accident you have had while away from home, even if you have not been able to notify him immediately.

If you cannot reach your own doctor, get in touch with the superintendent of the local hospital or the county or city health officer, and ask him whom he would recommend for you. If there is a serious illness requiring surgery, do not hesitate to say "Which doctor here would you select for yourself or your family if a serious operation had to be performed?"

If you are in a foreign country and need medical care, the United States Foreign Service will help you. Consult either the American Embassy (found in capital cities of foreign countries), the American Consulate (a smaller branch of the Embassy usually located in large cities), or the U.S. Legation (a branch of the Embassy located in smaller foreign countries).

CAN YOU CHANGE DOCTORS?

This is not something to be done casually. If, for example, your regular doctor is not available and you call another physician, your own doctor should take over as soon as possible.

However, it is possible to change doctors at any time. *But* I would advise that you select carefully, along the lines I have indicated, so you will never have to make the painful decision to change physicians at a time of serious illness.

If you ever do wish to make such a change, you should talk things over clearly with your doctor. It is best to make sure you understand the present situation before you change doctors. If you are dissatisfied with the results of treatment, a consultation with a specialist may convince you that your own doctor has done as well as can be expected.

WHAT ABOUT OSTEOPATHS, CHIROPRACTORS, AND CHRISTIAN SCIENCE HEALERS?

Osteopathy was founded on the theory that most diseases are caused by a misalignment of the bones, and should be treated by manipulations rather than by other methods such as the use of drugs. It is true that many osteopaths are sensibly altering their method of practice and no longer, for example, manipulate the bones of patients suffering from pneumonia or appendicitis. Some osteopathic schools are making a real effort to improve the quality of the training they offer, so that many osteopathic doctors are using modern drugs and techniques.

Chiropractors believe that diseases are caused by pressures on the nerves because of the faulty alignment of—especially—the vertebrae. They, too, believe that diseases can be cured by manipulations. There appears to be little inclination toward moderation and modernization among most chiropractors.

Christian Science is based on the theory that "Spirit is immortal Truth; matter is mortal error," and consequently, evil, disease, and death are temporary and unreal. To me, as a physician, there appears to be abundant evidence that disease and death are very real indeed. I do not question the religious philosophy of Christian Science for, like most Americans, I respect religious freedom, accepting at the same time the American principle that it cannot be permitted to interfere with the life and liberty of others. Therefore I think it is right that Christian Scientists must obey the laws such as those prohibiting parents from sending a child with a contagious disease to school where he can infect other children. In the case of Christian Science Healers I feel much as I do about chiropractors; namely, that they are not able to give the patient the care he ought to have.

I believe everyone is entitled to the best that modern medical science has to offer. While I realize that not every single doctor of medicine is as good as he should be, I know that—at the very least—he does not shut the door on the x-ray, on the wonder drugs that have miraculously reduced the mortality from such killers as lobar pneumonia and "blood

poisoning," on vaccination that has practically eliminated smallpox which used to decimate the population, and on the whole field of scientific research that may soon enable us to prevent infantile paralysis. Therefore, I recommend that you obtain your medical and surgical care from graduates of recognized medical schools, men with the M.D. degree.

MEDICAL QUACKS AND FAKERS

Beware of people who claim to have special powers to cure disease! They are unlicensed racketeers who take advantage of people in trouble. They "specialize" in treatments for venereal disease; they often give wrong advice about ruptures and hemorrhoids (piles); they offer surgery for the woman who thinks she needs an abortion; they even pose as psychologists and psychiatrists and promise cures for nervous tensions and other emotional disturbances. Many people have been mulcted, maimed, or killed by these racketeering frauds. *Stay away from them.*

Some of these people operate through the mails, advertising wonder creams and the like; and many set up practice right in the community. You can recognize them in any guise, however, by their exaggerated claims. They will promise a cure for anything. The American Medical Association has a list of the medical quacks, which can be obtained by writing to: 535 Dearborn Street, Chicago 10, Illinois. Better business bureaus usually make a point of investigating possible quacks, and will answer your questions about any in your neighborhood.

Remember that you can discuss any medical problem, no matter how distressing or delicate, with your own doctor. The ethical physician's attitude toward abortions is given on page 315; toward proper treatment of venereal disease on page 771; and toward psychiatric treatment on page 251. For accurate information about ruptures turn to page 711, and about hemorrhoids, to page 755.

SPECIALISTS

I believe it is always desirable to make arrangements through your family doctor—or at least in conjunction with him—when you find it necessary to consult a specialist. If you do this there will always be one doctor who knows everything that has happened to you and your family.

In order to become a bona fide specialist, a doctor should be accredited by the specialty licensure board in his field. This is very important,

as it indicates that he has had the extra training necessary for him to become expert in a particular branch of medicine. If he has satisfied the requirements of the specialty board, a physician undoubtedly has the proper background for his specialty. An inquiry addressed to the American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois, will enable you to find out whether a physician has met the requirements set for his specialty.

DICTIONARY OF SPECIALISTS

If you are to consult them at some time you should know something about the principal specialists in medicine and related fields, and what they do. The following list will help you:

The *obstetrician* (ahb-stuh-tri'shun) delivers babies and takes care of the pregnant patient during the months before the birth of the baby.

The *pediatrician* (pee-di-uh-trish'un) takes care of infants and children up to the age of twelve or fifteen. His specialty is called *pediatrics* (pee-dee-at'riks).

The *internist* (in-ter'nist) specializes in diagnosis and treatment of medical conditions of the entire body. (He is often referred to as a diagnostician or medical man, though neither of these terms defines precisely just what he specializes in.)

A *surgeon* (ser'jun) specializes in performing operations. He may be a *general surgeon* or he may confine his operations to one of the following branches of surgery:

The *gynecologist* (jin-uh-kahl'uh-jist) treats illness of the female organs; the *urologist* (yoo-rah'l'uh-jist) specializes in treatment of the kidneys. He also takes care of special problems relating to the male genital organs. For example, he would be the doctor usually called upon to operate on a diseased prostate gland. An *orthopedist* (or-tho-pee'dist) specializes in diseases of the bones and joints. The field of orthopedics comprises the setting of fractures, treatment of the end results of infantile paralysis and many other conditions which cause interference with the use of the bones, joints, or muscles. An *otolaryngologist* (o'toh-lar-in-gahl'o-jist) deals with ailments of the ears, throat, sinuses, and nose. An eye specialist, who has the degree of M.D., is called an *ophthalmologist* (ahf-thal-mahl'uh-jist). He is trained in surgery of the eye as well as in all its diseases.

An *optometrist* (ahp-tahm'i-trist) is not a medical doctor. He has been trained to examine the eyes for the purpose of prescribing eyeglasses. The *optician* (ahp-tish'en) is the man who fills the prescriptions

made by the ophthalmologists or optometrists. He is the counterpart of the pharmacists who fill prescriptions for medicines. Neither the optometrist nor the optician is trained to treat diseases of the eye.

The *dermatologist* (derm-uh-tahl'uh-jist) specializes in the treatment of diseases of the skin, hair, and scalp.

An *allergist* (al'ler-jist) specializes in such diseases as hay fever, asthma, hives, and allergic reactions to food.

A *psychiatrist* (sigh-kigh'uh-trist) is a graduate medical doctor who takes care of the mentally ill. It is very important to remember that psychiatrists deal mostly with individuals who have some behavior problem or neurosis. Only a small fraction of their time, usually, is spent with the insane. Psychiatrists are sometimes referred to by doctors as "psychologists," "nerve specialists," or "psychotherapists," to spare the feelings of individuals who still do not realize that treatment by a psychiatrist does not imply insanity (see Chapters 11, 12, and 13).

Organic diseases of the nerves and brain are treated by a *neurologist* (noo-rah'l'uh-jist) who is more properly a "nerve specialist" than is the psychiatrist. Some doctors are qualified to practice both neurology and psychiatry.

The *gastroenterologist* (gas'tro-en-ter-ahl'uh-jist) specializes in diseases of the stomach and intestines.

The *radiologist* (ray-di-ahl'uh-jist) is a specialist in taking and interpreting x-rays. He uses radium, x-rays, and other radioactive substances in the treatment of cancer and other diseases.

The *pathologist* (path-ahl'uh-jist) studies changes in tissues arising from disease.

The *anesthesiologist* (an-es-thee-zi-ahl'uh-jist) specializes in administering anesthetics for surgery.

Podiatrists (po-digh'uh-trists) and *chiropodists* (kigh-rahp'uh-dists) are names for the experts who treat minor ailments of the feet. They are not graduate physicians and their activity should be restricted entirely to the treatment of corns and other minor conditions. Your family doctor can often take care of these ailments. If not, he will know a reliable chiropodist who can help you.

SHOULD OPERATIONS BE PERFORMED BY THE GENERAL PRACTITIONER OR THE SURGICAL SPECIALIST?

This is one of the most difficult problems facing both the patient and the medical profession. Many general practitioners are competent to

handle major surgery; others have not had the training and experience that comes from specialization in surgery. Many operations such as removal of the gallbladder, partial removal of the thyroid gland, or stomach surgery for ulcer, require a high degree of skill and experience. Even a less drastic operation such as an appendectomy can be a very difficult procedure when it is performed in a very obese person.

What do I advise? First, talk the situation over fully with your own doctor. If he advises a serious operation, ask him if he plans to operate himself. If not, then have him suggest the surgical specialist he would select for a member of his own family for this same type of operation. If he says that he plans to perform the operation himself—and if there is doubt in your mind about his surgical experience—you might ask three questions: (a) the number of times he has himself performed this same operation; (b) does he feel that he can do as competent a job as a specialist in surgery; (c) what are the chances of death or disability in the operation that is proposed? After you have obtained the answers to these questions, all your doubts will probably be resolved. If not, you can always go to a specialist in surgery for his opinion, or travel to the nearest medical center for an examination and recommendations. Frequently, you will be told that your local doctor and hospital are equal to the task.

When an operation is advised for removal of the womb or the ovaries in a patient during her childbearing period, I feel that the family doctor should always have his opinion confirmed by a specialist in gynecology (Be sure to see page 775 on hysterectomy).

GROUP MEDICAL PRACTICE EXPLAINED

In some communities, doctors team up in group practice. Some of these groups include specialists in almost every branch of medicine; other groups may be quite small, consisting of a diagnostician, a surgeon, a pediatrician, and a laboratory specialist.

If these men live up to the standards of competence I have outlined, they will provide you with an excellent "combination" family doctor. Such a group can offer unusually good medical care because of the close cooperation between its various members. They can provide laboratory tests and the services of specialists at reasonable rates. Some groups provide service on a monthly prepayment basis for the entire family. These clinics usually provide annual medical checkups without extra charge. If you wish to learn the address of your nearest Group Clinic, send a postcard with your request to the U.S. Public Health Service, Washington, D.C.

No family doctor can spend as much time as he would like in educating you about all matters relating to your health. Your doctor expects you to cooperate with him by reading about important subjects such as vitamins in your food, your ideal weight, prevention of tuberculosis, good posture, and the dozens of other subjects covered in this book.

Approved Medical Schools in the United States and Canada

SCHOOL	ADDRESS
Medical College of Alabama	620 S. 20th St., Birmingham 5
University of Arkansas School of Medicine	1209 McAlmont Street, Little Rock
University of California School of Medicine	Medical Center, San Francisco 22
University of California at Los Angeles School of Medicine	Los Angeles
College of Medical Evangelists ¹	Boyle and Michigan Avenues, Los Angeles 33, and Loma Linda
University of Southern California School of Medicine ¹	3518 University Avenue, Los Angeles 7
Stanford University School of Medicine ¹	2398 Sacramento Street, San Francisco 15
University of Colorado School of Medicine	4200 E. Ninth Ave., Denver 7
Yale University School of Medicine (Connecticut)	333 Cedar St., New Haven
Geo. Washington University School of Medicine (D. C.)	1335 H Street, N.W., Washington 5, D. C.
Georgetown University School of Medicine	3900 Reservoir Road, N.W., Washington, D. C.
Howard University College of Medicine	520 "W" St., N.W., Washington, D. C.
Medical College of Georgia	University Place, Augusta
Emory University School of Medicine	36 Butler St., S.E., Atlanta
University of Illinois College of Medicine	1853 W. Polk St., Chicago 12
Northwestern University Medical School	303 E. Chicago Ave., Chicago 11
Stritch School of Medicine of Loyola University	706 S. Wolcott Ave., Chicago 12
University of Chicago, The School of Medicine	58th St. and Ellis Ave., Chicago
Chicago Medical School ¹	710 S. Wolcott Ave., Chicago
Indiana University School of Medicine	1040 W. Michigan Street, Indianapolis, and Bloomington

¹ Hospital internship required for graduation.

State University of Iowa College of Medicine	University Campus, Iowa City
University of Kansas School of Medicine	39th St. and Rainbow Blvd., Kansas City, and Lawrence
University of Louisville School of Medicine (Ky.)	101 W. Chestnut Street, Louisville 2
Louisiana State University School of Medicine	1542 Tulane Avenue, New Orleans 13
Tulane University of Louisiana School of Medicine	1430 Tulane Avenue, New Orleans 13
University of Maryland School of Medicine and College of P. & S.	522 W. Lombard St., Baltimore 1
Johns Hopkins University School of Medicine	710 N. Washington Street, Baltimore
Boston University School of Medicine (Massachusetts)	80 E. Concord Street, Boston
Harvard Medical School	25 Shattuck St., Boston 15
Tufts College Medical School	136 Harrison Ave., Boston 11
University of Michigan Medical School	Ann Arbor
Wayne University College of Medicine	1516 St. Antoine St., Detroit 26
University of Minnesota Medical School ¹	Minneapolis 14
St. Louis University School of Medicine (Missouri)	1402 S. Grand Blvd., St. Louis
Washington University School of Medicine	600 S. Kingshighway, St. Louis 10
Creighton University School of Medicine (Nebraska)	306 N. 14th St., Omaha 2
University of Nebraska College of Medicine	42nd St., and Dewey Ave., Omaha 5
Albany Medical College (N. Y.)	47 New Scotland Ave., Albany 3
State University of New York College of Medicine	350 Henry St., Brooklyn 2
University of Buffalo School of Medicine	24 High St., Buffalo
Columbia University College of Physicians and Surgeons	630 W. 168th St., New York
Cornell University Medical College	1300 York Ave., New York
New York Medical College	1 East 105th St., New York
Flower and Fifth Ave. Hospitals	
New York University College of Medicine	477 First Ave., New York 16
University of Rochester School of Medicine and Dentistry	260 Crittenden Blvd., Rochester 7
State University of New York at Syracuse College of Medicine	766 Irving Ave., Syracuse 10

¹ Hospital internship required for graduation.

Duke University School of Medicine	Durham, North Carolina
Bowman Gray School of Medicine	Winston Salem 7
of Wake Forest College	
University of North Carolina	Chapel Hill
Medical School	
Western Reserve University	2109 Adelbert Rd., Cleveland 6
School of Medicine (Ohio)	
University of Cincinnati	Eden and Bethesda Avenues,
College of Medicine	Cincinnati 29
Ohio State University	11th and Neil Avenues,
College of Medicine	Columbus 10
University of Oklahoma	800 N.E. 13th Street,
School of Medicine	Oklahoma City 4
University of Oregon	3181 S.W. Sam Jackson Park Rd.,
Medical School	Portland 1
University of Pennsylvania	36th and Pine Streets
School of Medicine	Philadelphia
Hahnemann Medical College and	235 N. 15th Street, Philadelphia 2
Hospital of Philadelphia	
Jefferson Medical College of	1025 Walnut Street
Philadelphia	
Temple University School of	3400 N. Broad Street,
Medicine	Philadelphia, 40
Woman's Medical College of	3300 Henry Avenue, Philadelphia 29
Pennsylvania	
University of Pittsburgh	3941 O'Hara St., Pittsburgh
School of Medicine	
Medical College of South Carolina	16 Lucas St., Charleston 16
University of Tennessee	874 Union Avenue, Memphis 3
College of Medicine	
Vanderbilt University School	21st Ave. S. at Edgehill, Nashville 4
of Medicine	
Meharry Medical College	18th Ave. N. at Meharry Blvd.,
	Nashville 8
Southwestern Medical College	2211 Oak Lawn, Dallas 4
of the University of Texas	
University of Texas	900 Strand St., Galveston
School of Medicine	
Baylor University College of	Texas Medical Center, Houston
Medicine	
University of Utah School	2nd S. and University Streets,
of Medicine	Salt Lake City
University of Vermont	Pearl St., College Park, Burlington
College of Medicine	
University of Virginia	University Station, Charlottesville
Department of Medicine	
Medical College of Virginia	12th and Marshall Sts., Richmond 19
University of Washington	Seattle 5
School of Medicine	
University of Wisconsin	418 N. Randall St., Madison 6
Medical School	

Marquette University	561 N. 15th St., Milwaukee
School of Medicine	
University of Puerto Rico	San Juan
School of Medicine	

CANADA

University of Alberta	Edmonton
Faculty of Medicine	
University of British Columbia	Vancouver
Faculty of Medicine	
University of Manitoba	Bannatyne Avenue, Winnipeg
Faculty of Medicine ¹	
Dalhousie University Faculty of	Morris Street, Halifax
Medicine ¹ (Nova Scotia)	
Queen's University Faculty	Kingston
of Medicine (Ontario)	
University of Western Ontario	346 South Street, London
Faculty of Medicine	
University of Ottawa	Ottawa, Ontario
Faculty of Medicine ¹	
University of Toronto	University Grounds, Toronto 5
Faculty of Medicine	
McGill University Faculty	3640 University, Montreal
of Medicine (Quebec)	
University of Montreal	2900 Boulevard du Mont-Royal,
Faculty of Medicine ¹	Montreal
Laval University	Quebec
Faculty of Medicine	

*Approved Schools of the Basic Medical Sciences in the United States
and Canada*

SCHOOL	ADDRESS
University of Mississippi	University
School of Medicine	
University of Missouri	Columbia
School of Medicine	
Dartmouth Medical School	Hanover
(New Hampshire)	
University of North Carolina	Chapel Hill
School of Medicine	
University of North Dakota	212 Science Bldg., Univ. Campus,
School of Medicine	Grand Forks
University of South Dakota	Vermillion
School of Medical Sciences	
West Virginia University	Morgantown
School of Medicine	
University of Saskatchewan	Saskatoon
School of Medical Sciences	

¹ Hospital internship required for graduation.

Medical Checkups

YOUR DOCTOR is the key to your medical health program. You should use his services wisely and well. That means enlisting his help in the prevention of sickness, in addition to seeing him when you are actually ill.

Almost everyone says, "I think I'll get checked up by my doctor one of these days," and then waits until illness strikes, sometimes disastrously, before doing so. I do not blame patients when this happens. It is only human not to want to think about disease and medical problems when one feels in tiptop shape.

However, if we realize the great value of the periodic medical checkup, we will go through with it automatically, and regularly experience satisfaction and pleasure from knowing that everything is right with our health. When I say "we" I mean just that: doctors, too, are subject to cancer, tuberculosis, and other diseases, and need regular medical checkups *to find disease in its early, curable stage*. This, for every one of us, is the main reason for the periodic checkup—to locate the trouble before it causes damage that is serious or perhaps beyond repair.

Let me give you an example, from my own experience, of the value of the periodic checkup: a young engineer, apparently in vigorous good health, decided to have a checkup before taking a strenuous new job overseas. The x-ray of his lungs showed a small area of tuberculosis. Early tuberculosis, which often can be detected only by an x-ray, is completely curable in most instances. A year later, after treatment, the young man was healed and recovered. On the other hand, advanced tuberculosis is serious; and if he had gone into a new and very strenuous job with this small spot in his lung, he would probably have developed really widespread tuberculosis before the disease made its presence known by such symptoms as fatigue, cough, loss of weight, fever, or hemorrhage from the lungs.

Merely for the guarantee against tuberculosis, which is one of the chief causes of disability and death among adolescents and young adults, the regular medical checkup would be worth the time and

money it costs. It is also important for older people to guard against lung disease.

I find that it is difficult to convince adolescents and young adults in exuberant health that they need regular medical checkups. Yet these are essential, for disease is so terribly tragic in teen-agers and young adults that every effort should be made to prevent it, or at least to find it early. Tuberculosis and rheumatic fever are common in young people. So, too, is nephritis (sometimes called Bright's disease). Even diabetes strikes at children and young adults—and usually in its severest form. Arthritis, asthma, anemias, and a surprisingly long list of sicknesses plague young people who should be going through the “best years of their lives.” How tragic to find the wonderful years of marriage and parenthood marred by serious diseases that might have been minimized or cured if detected early at a regular medical checkup!

Therefore I prescribe regular medical examinations for *everyone*, regardless of age, sex, occupation, or physical condition.

Before stating the full case for periodic examinations, I want to discuss a question which people frequently ask.

HOW OFTEN SHOULD YOU HAVE A PERIODIC CHECKUP?

I have already suggested that you begin your relationship with your doctor by having a complete checkup. When should the next one come? Ask him to suggest the date; it will probably be in a year, but it may be in six months, or in two or even three years. The truth of the matter is that the medical profession doesn't really know exactly how often examinations should be made. Doctors are inclined to believe that most potentially dangerous conditions will be caught early enough by an annual checkup; and they have found that most patients will accept the idea of having a yearly examination.

Some doctors feel that if you are in your twenties or early thirties, every two or three years will be sufficient, provided you have your lungs x-rayed every year to search for early tuberculosis, and your urine tested to detect any tendency toward diabetes. Physicians agree that people over fifty should have a search made for curable cancer once a year. For older people, or individuals who have a strong family history of cancer, the doctor may suggest regular checkups twice a year. Infants and young children need frequent examinations.

CHECKUPS GIVE A CONTINUOUS RECORD OF YOUR HEALTH

The regular medical checkup pays other dividends besides its guarantee against the development of many serious diseases. It gives your doctor an invaluable record of your health. For example, if your family physician has annual records of your blood pressure going back twenty years, he isn't going to be very disturbed if a slight elevation is found on your fortieth birthday during an examination for life insurance. He may let you in on the secret that your pressure has been normal every year for twenty years, except for a few points of elevation the week before you were married, fifteen years ago. He will probably advise you to ask the insurance doctor for a repeat examination after a weekend's rest, instead of at the conclusion of an exhausting day at the office.

Blood pressure records are by no means the only important ones that accumulate as a result of regular, yearly checkups. Your doctor learns the condition of your heart, lungs, digestive apparatus, and other vital parts of your body from examining you at these periods.

If you see your doctor only when you are extremely ill, which may be at very rare intervals, you can hardly expect him to know much about your usual state of health. And then, at the age of fifty, you confront him with a question such as "Do you think it will be safe for me to go mountain-climbing this year?" Remember that the more we physicians know about your health, year in and year out, reinforced by careful observation and laboratory examinations and tests, the better we can advise you in the crucial years of later life.

AN OPPORTUNITY TO DISCUSS EMOTIONAL PROBLEMS

Emotional crises and nervous breakdowns are, unfortunately, all too common. They seldom come on suddenly, but are usually the result of years of gathering tensions and problems. I believe one of the best features of the annual examination is the opportunity it gives both patient and doctor to have a heart-to-heart talk about emotional problems. You may often prefer not to discuss such matters with relatives and friends, but you can spill them to a sympathetic doctor. It is easier, too, if you have been seeing the same doctor year after year, and feel he is an understanding friend as well as a capable physician.

The annual checkup provides a good opportunity to work off vague fears that are troubling you. Sooner or later, most people develop a phobia, usually about cancer or high blood pressure. It has been my experi-

ence that when patients pay their hard-earned dollars for "just a checkup," they are almost always prompted by a hidden fear of some disease. I make it a point to tell women patients immediately after examining their breasts and womb that there is no tumor or cancer, and frequently hear a sigh of great relief from the grateful patient. Men are more apt to fear high blood pressure, stroke, or a heart attack.

Be sure to tell your doctor if you are concerned about your nerves or emotions.

BEST SEASON OF THE YEAR FOR A CHECKUP

Is there a good and bad time for the annual checkup? *Yes.* Remember that your doctor is a busy person, very much occupied during the fall and winter months with influenza, pneumonia, and all the other illnesses that keep him working overtime. The best time of the year for the doctor and for you, too, is the late spring or early summer. He can be leisurely then—an essential element in a good checkup. It's valuable for you to have the medical examination before your summer vacation in order to obtain your physician's advice about the amount of strenuous sports you can engage in with safety. Then, too, he will be able to check on those ten or twenty pounds you may have added during the winter months, and explain how you can remove them during the summer by sensible diets and exercise.

PROCEDURE OF THE MEDICAL CHECKUP AND EXAMINATION

THE MEDICAL HISTORY

The doctor or his nurse will ask a great many questions at your first checkup in order to learn every detail of your health background. In subsequent periodic checkups your doctor will want particularly to learn if any serious illness, such as cancer, tuberculosis, heart trouble, or diabetes has shown any symptoms. This means he has to work like a detective searching for all sorts of clues. For example, itching of the genitals may sometimes be an important symptom of diabetes. Bleeding from the vagina or the rectum could lead the doctor to suspect early, curable cancer.

THE PHYSICAL EXAMINATION

There are four parts to the physical examination: (1) inspection, (2) palpation, (3) percussion, and (4) auscultation.

This is the way in which these would be applied to the examination, for example, of your heart: The doctor first *inspects* the chest over the heart, looking for the heave and beat of the heart which provides a guide to its size and the way it is working. Then by *palpation*—putting his fingers and hands over the heart—he feels the way the heart beats. The normal heart feels one way, the diseased heart feels another way. For example, if a certain type of valve damage is present in the heart, the chest wall will vibrate very gently in a way that has a characteristic feel to the trained fingers. *Percussion* means striking the body with the fingers to bring out resonant sounds. Because the heart is not resonant and the adjacent lungs are, sound waves will change in pitch as soon as the doctor's fingers strike the chest over the heart. His experienced ears detect the change in note, and thus he has a guide to the precise location of the heart and its size. *Auscultation* means listening with a stethoscope. The normal heart sounds a certain way; if valve disease or some other heart trouble is present, the stethoscope picks up characteristic sounds which help in the diagnosis.

The doctor uses the same methods for examinations of the lungs. In ex-

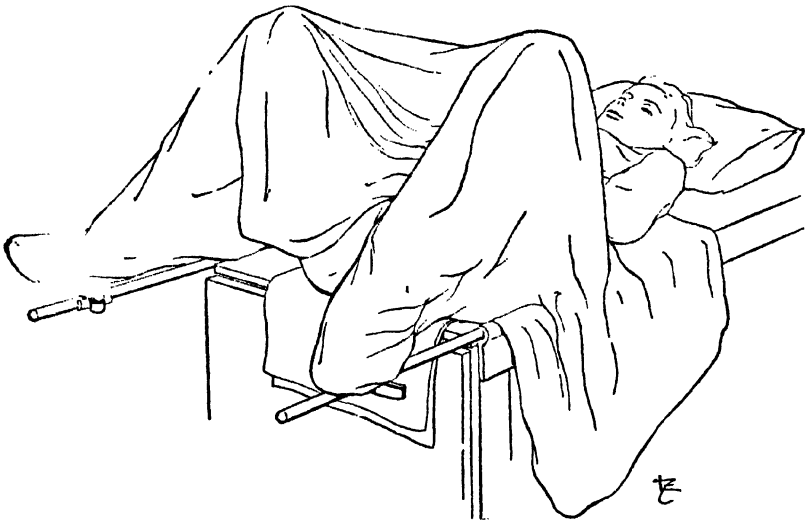


Illustration 27-1. PATIENT PREPARED FOR PELVIC EXAMINATION.

aminations of some parts of the body we find that only inspection and palpation may be useful.

The doctor adapts the physical examination to the situation. In elderly people he will search most carefully for cancer, high blood pressure, and heart trouble. When examining a person of twenty-five his mind is focusing on tuberculosis, rheumatic fever, nephritis, diabetes, and other diseases that may appear in that period of life.

No checkup is complete without an *examination of the rectum and genital organs*. These areas of the body are frequently the sites of cancers which can be terribly serious if not detected in the early, curable stage. Other diseases occur in these organs, too. The rectum and the female genital organs must be examined internally, requiring the insertion of the physician's gloved fingers. (See Illustration 27-1.) In examining women he will also use a speculum, a cylindrical instrument which distends the vagina, enabling him to see the tip of the womb.

LABORATORY TESTS

On the basis of the patient's history and the results of the physical examination, the doctor decides which laboratory tests will be required. The blood and urine are examined and the lungs x-rayed in almost every periodic checkup. His judgment will determine whether you need one or more x-rays and laboratory tests. If he asks you to undergo any special tests, be sure you understand what they are and the directions for taking them as well as the cost involved. Frequently the doctor will send you to a laboratory, a hospital, or a radiologist's office for these tests.

YOUR PART IN THE PHYSICAL EXAMINATION

FEES FOR PERIODIC CHECKUPS

Unless you belong to some prepaid or group medical care plan, such as the plans explained on page 582, you will have to pay a fee for your routine checkup. Doctors are often reluctant to suggest annual examinations, because they are sensitive about any taint of "salesmanship." It is much easier if *you* ask your doctor for an annual checkup. You might suggest, as you do with your dentist, that he have his secretary send you a reminder, mentioning a time for your appointment.

HOW TO HELP DURING THE EXAMINATION

You can be very helpful to your doctor during the physical examination if you will keep as relaxed as possible. It is much easier to examine the abdomen in a relaxed person than in one who tenses all the muscles. It will frequently ease your muscles if you breathe gently with your mouth open. Usually, relaxation will result when you realize that the doctor has a reason for everything he is doing. Some of our procedures, such as asking you to say certain words like "ninety-nine" have been developed from many years of experience: the lungs vibrate best when the words "ninety-nine" are uttered.

Avoid talking or looking at your doctor when he is examining you. In order to concentrate intently on our work many of us may look grim and intense because we are focusing every bit of energy on very faint sounds in the heart and lungs. Some patients assume we are finding all sorts of serious illnesses when, in fact, we are usually only making certain that everything is working *normally!*

Women should remember that a physical examination is no occasion for false modesty. Be prepared for delicate questions, and answer them fully and completely without reticence. Cooperate with your doctor by letting him know you understand the reasons for the rectal and pelvic examinations. If he fails to make these vitally important examinations, tell him tactfully that you would like him to do so. Some doctors are reluctant to make the suggestion, and prefer to have the request come from the patient. Women should also realize that, if the doctor does not have a nurse or receptionist, he would like you to bring along a relative or friend. Unless another woman is present in the same room when he conducts a pelvic examination, his reputation may be ruined by the gossip or charges of an hysterical or malicious patient.

YOUR MEDICAL VOCABULARY

It may save you some embarrassment if you learn a few medical terms for the various parts of the body. These are given in the illustrations which show you the principal parts of the body, including the genital regions. This book contains a dictionary of medical terms and an index that will help you define and *pronounce* medical terms.

If the doctor or nurse uses a medical term you do not understand, do not hesitate to ask what it means. We doctors have a habit of forgetting that our patients usually do not know that *dyspnea* means shortness of breath, or *dysuria*, painful urination. Many others of the Greek and Latin terms have become second nature for the doctor.

However, your doctor doesn't want you to use technical words, such

as "cardiac" for heart, unless you know their precise meaning. He wants, more than anything, to have you tell about your symptoms in your own way, without trying to make a diagnosis. Simply explain to him how you feel, point to where the trouble is, describe how long the symptoms have persisted, and also mention their severity. The doctor will probably take over from there and ask you questions. He may want to know if a pain is "cramplike," "burning," or "penetrating." All these differences in symptoms help him obtain a clearer picture of the cause of your illness.

THE FINAL DISCUSSION

After the doctor has completed his examination and has obtained the results of the laboratory tests and any other required information, he will discuss these with you. He may give you the good news that you are in excellent health; or he may prescribe a diet or give you a prescription for medicine.

Be sure you understand his instructions. Do not be timid; ask him any questions about your physical condition, and make sure your health is adequate for any vacation plans you anticipate, or for any changes you visualize in your work schedule.

How to Recognize Sickness Early

MAKE HEALTH INFORMATION A PART OF YOUR EDUCATION

AFTER YOU have read this book you should never have to worry about when to call the doctor. You will act correctly and at the right time. That is one of the main reasons why this book was written for you. You will never be guilty of the type of medical ignorance which I describe in this chapter. It is intended to make people realize the importance of becoming educated about health matters. The chapter also shows how easy it is to understand many of the danger signals of illness.

A PREVENTABLE DEATH

Recently I witnessed the tragic end of a case of medical ignorance. Visiting a great medical center some distance from my home, I was shocked to find a boy dying of diabetes. This should not have happened, not with insulin available, not in this modern era of treatment for diabetes!

I learned the sad story from the physician in charge. For a number of weeks the young boy, whose name was Freddy, had complained to his parents of feeling out of sorts. He was slowly and steadily losing weight and also appeared to be losing his strength. He spoke frequently of how thirsty he felt much of the time.

His parents were not really alarmed until they noticed one afternoon that he was unusually drowsy, almost stuporous. At that time, unfortunately several weeks too late, they telephoned the doctor. It was his busy season—flu, sore throats, and a measles epidemic—and they had difficulty locating him. By the time the doctor heard the story and made the diagnosis of diabetes, the child was unconscious.

Freddy was rushed to one of our best medical centers. Doctors stayed

with him continuously through the night injecting insulin and administering other necessary medicines. But the boy died.

We can treat diabetes today successfully, almost routinely, with insulin. Even the serious complications of acidosis and coma can be overcome if recognized early. That boy was entitled to live.

The parents meant well. They were guilty only of medical ignorance.

But ignorance of the law does not provide a valid excuse in court. I believe that ignorance and neglect of the common signs of sickness are even more inexcusable, for the cost of the transgression may be death.

Many people know virtually none of the elementary facts about illness, although this information may some day represent the difference between life and death to them. Why?

YOUR DOCTOR "VERSUS" YOU

People often assume that the doctor takes full responsibility for their health. They consult him when they become sick, and pay him for treatment and cure. But from the doctor's side of the fence we see a different situation. Often the physician is not consulted until the illness is dangerously far advanced. For example, Freddy's parents were unaware of the approaching tragedy during all those eight weeks when diabetes, untreated, was progressing toward its inevitable end. Other parents, more sensitive to medical problems, might have recognized, weeks earlier, the danger signal of excessive thirst. The problem is one of education.

Fortunately most potentially fatal diseases signal their onset with obvious symptoms. When a fever of 105 degrees and a violent chill strikes, you know you need medical attention. And whether your symptoms result from pneumonia, meningitis, or malaria, your doctor can cure you.

But many serious medical conditions develop silently, without obvious warning. A woman with a cancer of the uterus (womb) may suffer no illness or pain until the growth has progressed to the stage where it may cost her life. However, it is possible to prevent serious damage from this and other insidious diseases by learning to watch for certain danger signals.

Medical alertness and knowledge can save children with diabetes and early heart trouble; adults with stomach ulcers, cancer and many other ills.

"Hold on," you are saying. "How can you expect me to have all the specialized knowledge you doctors acquire during six or seven years of intensive training?"

That isn't necessary. The characteristic warnings of most illnesses can be recognized by all of us. A willingness to learn is the real requirement.

THE MAIN DANGER SIGNALS

Danger signals are *warnings*. They are not a cause for panic. You don't go to pieces every time you see a sign saying "R.R. CROSSING!"

Every age and condition has its own special problems which I discuss fully in other chapters such as those dealing with pregnancy and childbirth, mental health, first aid, sicknesses of childhood, "the killers," and so on. In this chapter I discuss the *main general danger signals* with which everyone should be familiar.

1. FEVER

Fever can be the signal of a serious disease or infection. Almost no one would hesitate to call the doctor when "burning up with a raging fever." But people are understandably reluctant to spend money or "bother the doctor" for the mild fever that often accompanies an uncomplicated cold or appears in some children (adults, too) when they are overexcited. In order to tell whether or not to send for the doctor, one must first *know*—not guess—whether a fever is severe or mild. Therefore you should know:

How—and when—to use your thermometer. There are two types of thermometers, rectal and mouth. With very young children it is usually safer to take the temperature by rectum than it is by mouth. Since rectal thermometers break less easily than mouth thermometers, it is a good idea to buy two rectal thermometers and keep one for mouth use, the other for rectal use. The temperature can also be taken in the armpit when a patient cannot, or will not, cooperate in having it taken by the usual oral or rectal method. See page 409 on how to take the axillary (armpit) temperature.

Before you take the temperature, shake the thermometer to bring down the mercury in it. Clinical thermometers, unlike those used to record the temperature of the air, don't go down by themselves; since they are "one-way" affairs, they must be shaken down before being used. Hold the thermometer tight and shake with a quick snap of the wrist; shake it over a pillow or bed so if it slips out of your hand you won't have to buy a new one. Don't run hot water over it to wash it as that may make it crack; use soap and cold water, or alcohol.

On pages 408-410 you will find directions for reading the thermometer. It should be kept in the mouth for from one to five minutes, depending on the type of instrument you are using. Three minutes is sufficient for the average thermometer.

It is relatively easy to read modern thermometers. A little practice turning it in the light will enable you to see where the mercury ends. You will notice a little red mark to indicate "normal." The mouth temperature of the *average* person is normally 98.6°, the rectal temperature 99.6°. Remember that the temperature when taken by rectum averages nearly a degree higher than when taken by mouth, so don't be disturbed if your infant or youngster has a rectal temperature as high as 100°. Be sure to tell your doctor whether you are reporting the rectal or mouth temperature. It is not essential for him to know the temperature to a tenth of a degree. He'll be satisfied if you tell him "the thermometer read nearly a hundred degrees at eight o'clock this morning, and two hours later it had gone to a little over a hundred and two degrees."

Take the temperature every few hours, not only when you or some member of your family "feel hot and feverish" but as long as there is fatigue, nausea, vomiting, headache, or loss of appetite—the signs that generally accompany a feverish condition. Remember that aspirin and the many medicines containing it can bring down the temperature for as long as four hours, and taking the temperature during that time may give too low a reading. Always tell your doctor what medicines have been given.

When is fever dangerous? If the fever is slight—under 100° by mouth or 101° by rectum—and the only other symptom is nasal congestion, a slight cough, or a scratchy throat, you can afford to wait. But record the temperature every three hours and note the severity of the other symptoms. If they become definitely worse or if the temperature rises to 101° by mouth or 102° by rectum, then it is wise to notify your doctor.

Incidentally, I am more pessimistic about sore throats and colds than many other physicians are. True, only a small percentage will be followed by severe complications such as rheumatic fever, Bright's disease, or pneumonia. But who can predict which cold or sore throat will lead to trouble? I'm for treating every sore throat which is accompanied by a high fever with penicillin or other effective antibiotics at the very onset to kill any stray streptococci or pneumococci.

Many doctors see no justification for such caution, pointing out that even medical research workers disagree on this. Some oppose giving antibiotics on the grounds that a patient could develop a sensitivity reaction. Your own physician may be on the opposite side from me. And it may be years before the question is settled.

Meanwhile I plan to keep on going my cautious way. Undoubtedly I shall waste some of my patients' money. On the other hand I may save some lives. Don't you look both ways every time you cross the street? Why? Because you know there is a slight but calculable possibility that

you may be hit by a reckless driver. That is the way I feel about those streptococcal germs.

One more note of caution about the common cold and even the slightest fever: people with chronic illnesses such as rheumatic heart disease, nephritis, asthma, diabetes, or anemia should call the doctor the moment a cold or fever develops—no matter how mild.

Always note the other symptoms. Any fever accompanied by a severe chill or rash should warn you that medical help is needed. A stiff neck, even if accompanied by only a slight rise in temperature, may be the first warning of polio or meningitis. A fever following an infected cut or other injury might mean blood poisoning (septicemia). Any fever with nausea and abdominal pain, especially in the lower right portion of the abdomen, *may mean appendicitis*. Appendicitis develops rapidly. It can be treated effectively in its early stages but becomes a major problem if neglected for even a few hours. Taking a cathartic can be extremely dangerous. If you cannot find your own doctor or an acceptable substitute, go to the nearest good hospital.

2. PAIN

Pain may be a warning signal. Unfortunately, not all illnesses announce themselves with the dramatic storm warning of fever; but a great many diseases cause pain. Kidney stones and gallstones produce an acute colic as they try to force their way through narrow tubes. Certain lung diseases are accompanied by pleurisy, the pain being at its worst when you take a deep breath. Heart disease may be accompanied by a clutching pain in the chest, especially under the breastbone—angina pectoris actually means “breast pang.”

Of course all of us occasionally have headaches and other fleeting mild aches and pains. These rarely require medical advice unless they become chronic. But if you experience any new or unusually acute pain in the chest or abdomen, notify your doctor.

3. LOSS OF WEIGHT

What about the illnesses not characterized by fever or pain? Diabetes is one. However, it may flash the danger signals of excessive thirst and loss of weight.

Anyone who loses weight on an adequate nonreducing diet is sick. If weight loss occurs without any decrease in appetite or change in diet, it indicates inadequate utilization of food, or that the food is being burned up too fast. The doctor usually suspects diabetes or an overactive thyroid gland.

An adult scarcely needs a scale to show up marked weight loss. If your well-fitted clothes suddenly become loose, you know you have lost a significant amount of weight. Children should be weighed as often as your pediatrician or family doctor recommends. If a child loses steadily or just fails to gain at the normal rate, mention it to your doctor.

4. SHORTNESS OF BREATH

Another important symptom is shortness of breath. Perhaps you suddenly find that climbing stairs or similar exertion leaves you puffing. This may warn you that you have merely become too obese or are leading too sedentary a life. But it may also indicate the beginning of heart trouble, anemia, or other potentially serious illnesses.

5. BLEEDING

Always be on the alert for unexplained bleeding. When it appears without obvious cause, bleeding is usually nature's warning of trouble somewhere. It may not always look like blood. Bowel movements, for example, can be colored as black as tar by bleeding from the stomach or the upper intestines. Blood can also impart various colors to the urine, ranging from a faint pink to a mahogany brown. Blood in the stools or urine should be reported to your doctor immediately.

Coughing or vomiting of blood are equally important. Do not postpone your visit to the doctor, promising yourself you will see him if the bleeding appears again. Nature frequently gives only one warning.

The appearance of blood is a signal for action—but not despair. If you consult your doctor immediately he can very probably cure what is wrong. Cancer is not the only illness that causes unexplained bleeding. So do stomach ulcers, hemorrhoids, and several others. Only your doctor can make the correct diagnosis—if you are alert enough to provide him with the opportunity.

All women should realize the tremendous importance of unexpected vaginal bleeding between periods or after the menopause. It may be the result of the most harmless polyp, but it may also be caused by early curable cancer.

6. OTHER WARNING SIGNALS

A *cough* which lasts more than a few weeks requires attention. *Jaundice*—yellowing of the skin and the whites of the eyes—is always a danger signal. But don't confuse a characteristically sallow complexion with jaundice. Look at the whites of the eyes; if they are distinctly

yellow, it is jaundice. A marked *change in the urine*—in its volume, color, or the number of times it must be passed—should make you suspect bladder or kidney trouble. I have already mentioned *excessive thirst*. Marked *weakness* or *fatigue* can also be signals.

The warnings for cancer are: persistent unexplained hoarseness, sores that do not heal, marked change in the size and shape of moles, continued indigestion with changes in bowel habits such as diarrhea or constipation, bleeding, and a lump or growth. Women have a special problem here because of the frequency of *cancer of the breast*. Should women examine their breasts regularly for a lump or other change that might indicate a tumor? Doctors disagree about the advisability of this procedure. Some physicians crusade for it. Others are violently opposed. My feeling is that its usefulness depends on the individual woman. Some feel safer when they examine their breasts each month; they have the capacity not to think about tumors again until the next examination date comes due. Others, however, cannot examine themselves with sufficient skill or equanimity to make the procedure useful. Let your doctor advise you after a frank discussion. Be sure that you have a definite understanding with him about the plan to be followed for a checkup of the breasts. (See page 626.)

There you have the more important warning signs to watch for. If you are alert to them all, you will never have your own ignorance to blame for a tragedy in your family. Of course, no set of rules can cover every situation. But I do believe this chapter will enable you to recognize most illnesses early, in their most curable stage. However—one more word of caution: cancer, tuberculosis, high blood pressure, and certain other serious medical conditions notoriously give few characteristic warning signals. The best way to protect yourself and your family against them is to have the periodic medical checkups I have advised.

And finally, do remember the one cardinal golden rule which your physician will respect day and night: *when in reasonable doubt ask the doctor.*

Your Personal Health Inventory

THE SYSTEM I have advised for you will take care of the detection and prevention of many illnesses. By regularly scheduled medical checkups you can be sure of discovering most serious illnesses before they have gone too far. By learning the danger signals you will catch many diseases before they get under way.

Unfortunately, however, some diseases do appear between checkups and may advance quite seriously. That is why I recommend a *second line of defense* in your health program: *Your Personal Home Medical Checkup*. Combined with your regular visit to the doctor, a few minutes spent once every two months on this health inventory will be an additional safeguard for your health. It is convenient to make a note on your calendar to look at this chapter on the fifteenth day of every other month.

CHECKING UP ON YOURSELF

If the answer to any of the following questions is YES, you should see your doctor as soon as possible at his office. If you have a perfect score of NO, the chances are reasonably good that your health is satisfactory, and that you can wait *until your next scheduled periodic health examination*—but no longer—before seeing your doctor or visiting your hospital clinic.

1. Have I noticed a sore on the skin, lips or tongue, which doesn't seem to heal over?
2. Do I get short of breath when walking on level ground, or climbing stairs, or performing types of exertion which didn't bother me in this way previously?
3. Am I troubled with indigestion, nausea, loss of appetite, abdominal pain or cramps, or the recent sudden appearance of constipation or diarrhea?

4. Have I noticed blood in the bowel movements?
5. Am I steadily losing weight? Or am I steadily gaining weight? Is my weight under or over the average weight for my height and build, given on page 43?
6. Am I getting nervous, irritable, or depressed? Have I been having crying spells? Do I have a persistent feeling that people are against me? Do I feel a nervous breakdown coming on?
7. Do I feel run down? Do I have a new persistent pain or any other new symptoms?
8. Has my skin color changed? Do I have a pallor?
9. Have I a cough that has been lasting longer than one month? Have I coughed up blood?
10. Have I had persistent hoarseness?
11. Are my hearing and eyesight as good as they ever were?
12. Have I had any dimming or fogging of vision?
13. Have I had any persistent headaches?
14. Have I felt any discomfort in my chest without obvious cause?
15. Have I noticed swelling of my feet or ankles or both?
16. Have I had any prolonged aches in my back or limbs or joints?

SPECIAL QUESTIONS FOR WOMEN

17. Have I noticed vaginal bleeding at unexpected times?
18. Am I troubled with hot flashes?
19. Have I felt a lump in my breast or have I been worried about cancer or tumors there or in any other part of the body? *

SPECIAL QUESTIONS FOR MEN

20. Has my urination been abnormal recently (difficulty in starting or stopping, any dribbling, etc.)?
21. Am I ruptured, or do I think I may be?
22. Do I believe I may have contracted some illness overseas during the war?
23. Am I worried about having a venereal disease?

* I suggest that every woman reader of this book read page 626 about how to examine the breasts for cancer without becoming a victim of worry or fear.

IMPORTANT NOTE

These symptoms can be caused by serious, preventable diseases, BUT they can also arise from other mild conditions. As an example—shortness of breath can be caused by heart trouble or by overweight. *Let your doctor make the diagnosis for you.*

CHAPTER 30

Your Hospital

THIS CHAPTER contains the following two sections: 1. Today's Hospitals—a description of various types of hospitals, and a guide to finding a good one. 2. When You Go to the Hospital—an explanation of what to expect when you enter a hospital as a patient.

I. TODAY'S HOSPITALS

You probably have some idea of the many different kinds of hospitals there are in existence—from small ones resembling private homes and accommodating only a few patients, to tremendous, imposing structures that look as though they house an entire city. You know about hospitals that specialize in certain types of cases, and others that accept all kinds of patients.

Every hospital, however, falls into one of two groups: those that are **ACCREDITED** and those that are not. **THIS IS THE ONE THING YOU MUST KNOW BEFORE YOU SELECT YOUR HOSPITAL!**

WHY YOUR HOSPITAL SHOULD BE ACCREDITED

An accredited hospital is one which has been approved by the Joint Commission on Accreditation of Hospitals. Accreditation means that the hospital has met the following standards:

1. The physicians and surgeons are organized as a medical staff, and membership on that staff is restricted to physicians and surgeons who are graduates of American Medical Association-approved medical schools, and who are legally licensed to practice in their respective states.

2. The doctors are competent in their respective fields.

3. The medical staff has adopted rules, regulations, and policies to

govern the professional workers in the hospital, and the staff meets at least once a month.

4. Members of the medical staff review and analyze their clinical experience at regular intervals.

5. A medical records department writes and keeps records on all patients.

6. Diagnostic and therapeutic facilities such as a clinical laboratory and an x-ray department, with skilled men directing them, are available in the hospital.

An accredited hospital guards its reputation. As I mentioned in Chapter 26, it will seek out doctors of real ability for appointment to its staff. It will not permit members of its staff to perform operations for which they are not qualified. You will not find a "ghost surgeon" in an accredited hospital. (A "ghost surgeon" operates secretly and splits the fee with another physician who pretends he himself performed the operation rather than admit to the patient that there are certain major surgical procedures he cannot undertake. Of course, this reprehensible practice is forbidden by the American Medical Association.) In an accredited hospital there is no misrepresentation. The people who care for you there may not be perfect, but you can be sure they meet established standards.

Surely these things are more important to you than the fact that a non-accredited hospital has a beautiful building or serves fancy meals! **SO FIND OUT FIRST WHETHER OR NOT A HOSPITAL IS ACCREDITED.** I have already suggested that you ask your doctor which hospital he would send you to, and whether it is accredited. *Your doctor, or your county or state medical society, will give you this information. Or send a card of inquiry to the Joint Commission on Accreditation of Hospitals, 660 North Rush Street, Chicago 11, Illinois. If there is no accredited hospital in your community, you will probably find one near by; and it is well worth taking a trip to avoid taking a risk.*

It is barely possible that you may have to go to a hospital that is not accredited—if there is no other place available in an emergency, or if, for example, your doctor, in whom you have confidence, assures you that the hospital has applied for accreditation and he is certain it will be granted.

TYPES OF HOSPITALS

Among the many types of hospitals in existence are *special hospitals* which handle only particular types of illnesses, and *general hospitals* which are organized to take care of a great variety of illnesses. Some of the special institutions are for tuberculosis, mental illness, convales-

cence, orthopedics, children, maternity, and eye. Most people, however, are concerned with the general hospital which has become increasingly important in recent years because it has incorporated many of the services of the special hospitals.

Another modern plan, usually found in large cities, is the *medical center* in which specialized hospitals are grouped within the space of one or two blocks about a main general hospital.

Hospitals are financed in different ways. A small number of them are owned by private corporations, partnerships, or individuals, and are run to benefit their owners. These are *proprietary* hospitals and are often not so well equipped or staffed as other hospitals. *Government* hospitals, such as the veterans' hospitals, are built and manned and completely financed by the Federal government. Many large city hospitals are supported by the municipal or county government or both; these are called *city* or *county* hospitals. Some hospitals are run by private nonprofit corporations organized for charitable purposes. These institutions are usually partially supported by endowments and gifts, and partially by community and government funds, and are called *voluntary* hospitals. Church-affiliated hospitals belong to this group.

FUNCTIONS OF THE MODERN HOSPITAL

Modern hospitals have many functions, in addition to being institutions to care for the sick. They are educational institutions. They provide positive preventive medical care programs for their patients as well as for the general public—instruction in ways to avoid repetition of illnesses and in ways to live with chronic ones such as diabetes, hypertension, and the like. They also help train doctors and nurses for the important job of diagnosing and treating the sick. Doctors in a hospital aid each other by exchanging the results of their research and treatment, and by consulting one another about difficult cases.

MEDICAL CENTERS AND FAMOUS CLINICS

I was frequently asked by patients in Boston, one of the greatest cities in the world for medical knowledge and skill, "Should I go to the Mayo Clinic for my operation?" Yet Boston has a number of medical centers and hospitals in which surgery can be obtained equal to that provided by the Mayo Clinic. Many people have heard of the Mayos although they do not know the name of the equally excellent clinic in their own community. This is due to the fact that the Mayo brothers were pioneers, as was Dr. George Crile who established what is now called the

Cleveland Clinic, and Dr. Frank Lahey of the Lahey Clinic in Boston.

A generation or two ago, only the largest cities in this country were able to provide major surgery with adequate safety and skill. If a small city did possess a well-trained surgeon, it was apt to lack a good hospital with sufficient laboratory equipment and a competent pathologist; therefore the surgeon could not offer his patient the best possible care. The Mayo brothers established a clinic in Rochester, Minnesota, which had good diagnosticians, surgeons, and laboratories, providing everything required to guarantee good work. That was a forward step in those days, especially for the newer parts of our country.

Today, however, dozens of American cities have outstanding medical schools and centers, and hundreds have hospitals in which excellent major surgery is performed. The famous clinics have, in the main, become a part of the medical centers, and thus continue to play a vital role in the health program of the nation, especially in certain fields of medicine. For example, few cities with a population of less than 500,000 have adequate facilities for brain surgery. Diagnoses on the brain and spinal cord, which require highly complicated apparatus, can best be made at a medical center, as can diagnoses of many obscure diseases.

The medical centers *usually* offer superior medical care for the following types of surgery:

Surgery of the eye, especially cataract operations

Plastic surgery, e.g., repair of cleft palates in children

Surgery of the heart

Major surgery on the lungs, e.g., removal of parts of lungs or a whole lung for tumor or infections

Special orthopedic operations for correction of deformities of polio, arthritis, and other illnesses.

Patients in medical centers are usually referred there from smaller communities or from other hospitals. Such referrals are becoming more frequent because these larger centers can best handle medical diagnosis which requires radioactive substances. In addition, the trained specialists at these medical centers are better equipped to direct the x-ray, radium, and other types of radioactive treatment for tumors, cancers, and other such conditions.

THE IMPORTANT MEDICAL CENTERS

Most of the leading medical centers are located in connection with a leading medical school. Many of the medical schools listed on page 537

have one or more medical centers connected with them. For example, there are the Johns Hopkins Hospital and Medical School in Baltimore, the Massachusetts General Hospital which is associated with the Harvard Medical School in Boston, and Billings Hospital and the University of Chicago Medical School in Chicago. The Mayo Clinic is now a non-profit foundation connected with the University of Minnesota Medical School.

The famous medical school of Columbia University, The College of Physicians and Surgeons, is the focal point of a very large medical center, which many of you may have seen with its tall buildings near the Hudson River at West 168th Street in New York City. A large general hospital, the Presbyterian Hospital, is an important part of the Center, and is linked very closely, even physically, with the medical school. Other principal units are these: The Babies' Hospital (pediatrics); Sloane Hospital for Women (obstetrics and gynecology); The Squier Urological Clinic (diseases of the kidneys, prostate, bladder, etc.); The Institute of Ophthalmology (diseases of the eye); The Neurological Institute (organic diseases of the brain and nerves); The New York State Psychiatric Institute; and The New York City Delafield Cancer Hospital.

WHAT ABOUT HOSPITAL CARE IN RURAL AREAS?

Unfortunately everyone in the United States does not have equal access to the valuable services of modern hospitals. People who live in rural areas are often handicapped by the inaccessibility of hospitals. Sometimes hospitals are constructed at central points in these areas in order to meet their needs; too often, however, these hospitals cannot be adequately financed or else fail to get the necessary equipment or the better doctors required to do a top job. Thus, people in rural communities often must travel to the larger cities when they are in real need of hospitalization. The problem has been somewhat alleviated by the system of sending traveling units of doctors and equipment to serve the outlying hospitals once or twice a week. Nevertheless, the major problem—how to serve the rural population effectively—still remains.

COSTS OF HOSPITAL CARE

Modern hospital care is extremely expensive and the charges vary with the kind and amount of service rendered. *Private* rooms house

only one person and are therefore the most expensive accommodations; *semiprivate* facilities have beds for two to four patients in a room, and are less expensive than private rooms; *wards* take care of five or more patients, and are the least expensive.

"Patient care" is a basic charge each hospital patient must pay for room, meals, and nursing care. In addition to this, the hospital may charge extra for the use of the operating room and equipment, anesthesia materials, blood, laboratory examinations, x-ray examinations, and treatment.

Although exceptions are usually made in the case of accidents or emergencies, many hospitals ask patients to make arrangements to pay before being admitted, and will usually request a week's payment in advance. Actually, this is good sense because after hospital service is rendered it cannot be taken back if the payments are not made. Payment in advance is not as harsh a rule as it may seem, for nearly all hospitals will adjust their rates to the income of the individual. You can learn the best arrangement for your purpose through your doctor or directly from the hospital. There are usually three ways a patient may pay for hospital care: (1) out of his current income, (2) by a pre- or part-paid insurance plan, or (3) as a public charge in which case the government pays the bill. The expense of hospital care can best be met by adequate insurance. (See page 582 for a discussion of the Blue Cross Plan and other methods of insurance against hospital bills.)

Patients who enter on the public ward of the hospital usually cannot be treated by their own private doctors, but are placed under the care of hospital staff physicians. However, in almost every hospital the family doctor is given full reports of the diagnosis and treatment. The quality of care a patient gets on the ward depends, of course, entirely on the standards of the hospital. If the hospital's standards of medical care are high, as they are in most nonprofit hospitals, the younger physicians on the ward will be carefully supervised by experienced doctors.

If there is a choice of accredited hospitals for you to select from, your doctor will take these matters into consideration when recommending a specific one to you. Be influenced by his suggestion. Most doctors would rather work at one hospital than at another. At his own favorite hospital the doctor—or surgeon, or obstetrician—does better work because he has had more experience with the assistants and nurses who team up with him.

SPECIAL HOSPITAL CARE

For information about what to do if you plan to travel in a foreign country see page 217. If you are a veteran or a member of the Armed

Forces, be sure to learn what benefits and hospital services you may secure. Here are some medical services offered by the Veterans' Administration:

Hospitalization in a V.A. hospital or approved nursing home, with priority going to the following cases, if the hospital should be crowded: emergencies; injuries or diseases incurred or aggravated in line of duty during wartime services; non-service-connected conditions if the veteran is unable to pay hospital charges elsewhere.

Transportation to and from the hospital, under circumstances similar to those listed above.

Out-patient medical treatment for veterans with service-connected illnesses or disabilities, in V.A. hospitals or clinics, or from approved private physicians.

Necessary *medicines*, either through the hospital or clinic, or from local druggists if treated by an approved private physician.

II. WHEN YOU GO TO THE HOSPITAL

One out of every eight people in the United States will go to a hospital this year. Don't be alarmed at the possibility that you may be one of them. Today's hospital is not just a place for someone who is seriously ill or requires a major operation; the one-in-eight group includes maternity cases, people who are having their tonsils removed, and cases admitted for observation or special diagnostic tests.

Some people fear hospitals because their parents did, or because of stories that have been handed down to them. Although there was justification for being afraid of hospitals in the old days, there is no resemblance between the modern hospital and the "pesthouse" of the past. The tremendous progress of medical science is nowhere exhibited to a greater degree than it is in the change that has taken place in hospitals. For example: 75 years ago (even less, in many places) doctors did not know that germs had anything to do with diseases or wound infections, and consequently they didn't even wash their hands before performing an operation or delivering a baby. The very idea of *trained* nurses was so new that few people had even heard of it; the first nurses' training school in the United States was established in 1872. Once, hospitals were primarily for people who were too poor to be cared for in their homes; but now no one is too wealthy to go to a hospital.

Hospitalizing children and old people presents some special problems which I discuss on page 497.

Let us assume that you are going to the hospital for special diagnostic

tests, that you have had symptoms of hyperthyroidism but your doctor cannot be sure of this diagnosis without making use of the equipment and facilities the hospital affords.

HOW A PATIENT IS ADMITTED TO THE HOSPITAL

Your physician calls the hospital with which he is affiliated and arranges for you to stay there, telling the hospital officials the time of arrival and the type of accommodations you will want. (As I mentioned previously, it is important to choose a doctor who has access to the facilities of an accredited hospital, because hospital staffs are so arranged that a doctor cannot treat you there unless he belongs to the staff of that particular hospital.)

You arrive at the appointed time with a few personal effects such as pajamas, slippers, robe, and toilet articles. The receptionist at the desk greets you, and asks your name and the name of your doctor. Then she leads or directs you to the admitting office. Here the admitting officer, if she thinks you are well enough, takes time to tell you the hospital rules and to ask you a few questions so she may complete her hospital records. She will also discuss your plans for paying the hospital bill. After that she will call a student nurse or an orderly to take you to your room or ward, and will also notify the switchboard and the information desk and the attending hospital physician that *you* have arrived.

You may have seen nurses in different kinds of uniforms. You may see *probationers* who are in the early months of their training and who perform routine hospital tasks as part of their preparation for becoming nurses. After passing an examination a probationer becomes a *student nurse* for the remainder of her course, which usually takes three years. After graduating she becomes a *trained nurse* or *graduate nurse*, and after she passes a state examination she becomes a *registered nurse* or "R.N." Many nurses take special courses in addition to those that are required, in order to fit themselves for nursing specialties.

HOSPITAL LIFE AND ACTIVITIES

The supervising nurse on your floor greets you and helps you change into hospital bed clothing. Probably your own doctor will be responsible for your care; if so he has left detailed instructions concerning the examinations and tests you will need.

First on your schedule is *hospital routine*. The attending nurse checks

your weight, temperature, pulse, and respiration, and records them on your bed chart. She also orders your diet, according to your doctor's instructions.

A nurse will answer your call if there is anything you need, and a circulating library service is usually at your disposal if you feel like reading. (In many hospitals, attendants distribute games to children, or may even have story hours for them.) You can probably have a radio in your room, and if you have a room by yourself you may receive permission to rent a television set. (In many communities volunteer groups have raised funds to purchase television sets for the patients in tuberculosis sanatoriums and other hospitals where the patients stay for a long time.)

The hospital, you soon discover, is a busy place. From the managing board to the janitors, the hospital crew is working around the clock. Here is what goes on behind the scenes.

THE STAFF DOCTORS ASSIST YOUR DOCTOR

Staff physicians and young doctors rounding out their medical education are continually making rounds of the wards, observing changes in the condition of the various patients, and administering prescribed treatments to them.

Do not assume that every young doctor who lives in the hospital is an intern. Today, in the larger hospitals, doctors frequently spend three to five years in training after they are graduated from medical school. For one or perhaps two years they are called interns; then they become assistant resident doctors, and finally in their third, fourth, or fifth years, chief or senior resident physicians. The chief resident has had seven to nine years of training from the time he enters medical school; that is why your own doctor has great confidence in him. If it becomes necessary, the chief resident will always call the family doctor to the hospital outside of his regular hours there.

Most doctors visit their hospital patients once or twice each day. Naturally, your doctor keeps these visits on a regular timetable so that he can meet his office appointments and his schedule of home calls. Do not expect him to spend more time with you than is necessary, or ask him to see you outside his regular visits unless there is a real emergency that cannot be handled by the staff doctors.

OTHER STAFF MEMBERS

Not far from the wards are the clinical and pathology laboratories where trained people are helping to diagnose ailments by performing

the proper tests on patient specimens. Here a *pathologist* and his staff of technicians use modern scientific instruments and chemicals that enable them to determine patient progress, to diagnose disease, and to discover new means of combatting disease. In these laboratories, with the aid of radioactive iodine and basal metabolism tests, your doctor will obtain valuable help in determining whether you are really suffering from hyperthyroidism (our hypothetical diagnosis).

The hospital may also have a department for *physical and occupational therapy*. The directors of this department will have been graduated from physical or occupational therapy schools approved by the Council on Medical Education and Hospitals of the American Medical Association. Physical therapists render massage treatment and the like to persons crippled by polio or suffering physical defects or ailments caused in other ways. Occupational therapists train disabled persons for new skills and jobs that are compatible with their disabilities; occupational therapy also includes crafts and other work that helps the morale of patients.

In another part of the hospital the *dietitians* are at work. They prepare nutritious meals and at the same time consider the needs of individual patients.

In another department licensed *pharmacists* are filling prescriptions for the drugs and medicines staff physicians will use to treat patients.

The x-ray department is another busy section of the hospital. Here a physician, specializing in this type of work (a *radiologist*) is taking x-rays and reading them for diagnosis. He may also give x-ray treatment for many types of disease.

If your hospital is a large and modern one, it will probably also have a dental clinic. Here there are *dentists* to take care of emergency dental trouble and make oral examinations of entering patients.

A vital part of the hospital is the *blood bank*. Here many pints of blood are stored, ready for those who may need it—accident victims, patients undergoing operation, or those suffering from such diseases as leukemia (see page 623) and other conditions which require blood transfusions.

Large quantities of *medical equipment* such as oxygen tents, portable mechanical "lungs," and infant incubators are kept in the hospital for anyone who might need them.

The hospital is a closely integrated unit. Unseen workers such as housekeepers, carpenters, engineers, electricians, plumbers, bookkeepers, and secretaries perform the necessary duties that maintain the hospital.

THE OUT-PATIENT DEPARTMENT

We have not yet mentioned a vital part of the behind-the-scene ways your hospital serves you, the patient. You may not see it this visit; you may never see it at all; but it is there, and many people come into contact with it every day. This is the *out-patient department*, the part of the hospital giving medical care to ambulatory patients, and often offering help and guidance to patients who have been dismissed from the hospital.

Doctors in the out-patient department treat accident and emergency cases which come in during all hours of the day and night; in addition they diagnose and treat almost every type of disease which entering patients may have. The out-patient department is often arranged according to the specialties of medicine, with divisions for heart disease, cancer, and other illnesses, as well as for prenatal, baby, and child care. In these clinics patients can secure the valuable services of specialists they probably could not afford in private practice.

People use the out-patient clinics not only when they cannot afford a doctor in private practice, but also as an addition to the medical care they are obtaining from a private physician.

Patients entering here first have a preliminary examination in which trained men diagnose their ailments and, if necessary, send them to the specialists they may need for treatment.

Some patients go directly to the specialists, when they are referred by their own family doctor. Treatment in these clinics is by appointment.

It is important to realize that there is no stigma attached to using a hospital clinic. It doesn't imply that you are penniless or unable to pay for part of your medical care. The diagnostic techniques required in some illnesses have become so technical, or the treatment so specialized and extensive, that hardly any but a very well-to-do person can be expected to assume the entire cost.

The out-patient department may also sponsor educational programs to teach the public preventive medicine.

SOCIAL SERVICE

Another special part of the hospital is the *medical social-service* department. Here patients are helped to solve their personal problems, such as home conflicts that interfere with recovery, or their difficulty in paying the hospital bill or securing a job after being discharged from the hospital. Medical social-service workers are concerned with restoring

the patient to a functional place in the community after he leaves the hospital.

THE HOSPITAL DIRECTOR

All the many activities of the hospital are coordinated by the director. In some hospitals he is called the supervisor or manager, and some Catholic hospitals are supervised by a nun who is called the administrator. The director of the Veterans Administration hospitals is called the manager.

If you have any questions about hospital charges, if you want to know about insurance company charges or about Blue Cross or Blue Shield payments, the director's office will help you.

If you have complaints about the care you receive, first bring them to the attention of your doctor or the head nurse in charge of your floor. Then if you feel further discussion is warranted, request an interview with someone in the director's office.

Let us assume that three days have passed and the hospital tests have substantiated your doctor's suspicions that you have hyperthyroidism. Your doctor feels your type of overactive thyroid gland can best be treated by surgical removal of most of this enlarged gland. He explains why he believes surgical treatment is better in this case than medical treatment, and suggests that you be examined by a surgeon who has had considerable experience with operations on the thyroid gland.

If you like the surgeon he suggests, and the surgeon also confirms the diagnosis, your doctor will arrange for your operation. (See Chapter 31 on surgical operations.)

After you have recovered sufficiently from your operation, your doctor will arrange for you to leave the hospital, possibly to a *convalescent home* for a week or two before returning to your own home. Such a place should be licensed, which means it is inspected and fulfills medical and nursing requirements as well as those regarding fire hazards, cleanliness, adequate meals, and so on. The board of health can help you and your doctor answer questions about convalescent or nursing homes.

Even if you have seen only part of the hospital and its amazing departments, you will still leave knowing that it is a place where modern facilities and well-trained people take good care of the sick.

I must confess I have described the best type of hospital. Unfortunately there are a number of hospitals in which the medical standards are high but the spirit of humanity seems to be lacking. I have crusaded for a better appreciation of the needs of the patients in hospitals, as have

other doctors and writers in recent years. From my own observations and from letters I have received from readers throughout the country, I find that most hospitals are becoming far more understanding toward the personal needs of their patients.

What You Need to Know About Surgical Operations

WHAT HAPPENS when someone needs an operation? Let us assume that after the completion of the tests during the hospital stay described in the last chapter, the doctor decided that an operation was necessary to remove most of the enlarged thyroid gland. He would proceed to explain the pros and cons of medical versus surgical treatment for hyperthyroidism, giving his reasons for suggesting the latter. Then he would probably arrange for an examination by a surgeon who had had considerable experience with operations on the thyroid gland. The family doctor would explain that he himself would not attempt such an operation since he was a general practitioner who had chosen to limit his practice almost entirely to diagnosis and treatment of medical conditions. (See page 535 for discussion of operations by a general practitioner versus a specialist.)

Assume that the surgeon agrees with the family doctor's diagnosis and recommends an operation. It is agreed by all concerned that the operation be performed as soon as the necessary preparations are made.

PREPARATION FOR A SURGICAL OPERATION

Before an operation is undertaken the patient is carefully examined to make certain he is in sufficiently good condition to undergo it. X-rays will be taken and other tests made after he has gone to the hospital, to be certain he does not have tuberculosis, diabetes, nephritis, or some other serious illnesses. How good the patient's health should be varies with the type of operation he is facing. Modern surgical methods have made it possible to operate successfully on many patients who are not in good health, but such a procedure is undertaken only when it will subject the patient to less serious risks than those involved in failing to operate. The doctor carefully weighs all the factors.

For example, only essential operations are performed on patients who have had certain types of "heart attacks" within the preceding six months.

However, much of the operative danger to people with "bad hearts" can be eliminated by the use of medicines, by the careful administration of proper anesthetics, and by making sure the patient is rested and calm. For this reason a person suffering from heart disease may need a fairly long stay in the hospital in preparation for an operation. In the case of the patient requiring a thyroid operation, the surgeon will probably keep him in the hospital for days or even weeks, and give medicines to slow down the overactive gland, before he operates. On the other hand, the doctor may hospitalize a patient with a hernia (rupture) needing surgical repair only long enough (a day or two) to make the necessary tests.

In addition to those already mentioned, blood tests would be made to make certain his blood clots normally, and to determine his blood type in case he should need a transfusion. A nurse or attendant shaves and thoroughly washes the part of the body to be operated upon; and, after a good night's sleep, the patient is ready for surgery.

By this time the doctor has undoubtedly explained precisely what he plans to accomplish by the operation. He should be willing to discuss any danger that might be involved, and how he hopes to avoid it. No good surgeon will oversell himself or the operation. You, the patient, should ask anything you want to know about the operation at least a day before it is scheduled, as the chances are you won't see the surgeon on that day. Don't be alarmed if you don't see him; he will be busy with preparations while you are being taken to the operating floor of the hospital. Usually the anesthetist and your own family doctor will be present and will tell you how to make the experience of taking an anesthetic an easy one—by not fighting against it, for example, so that before you know it you are breathing deeply, and sleep has come.

ANESTHETICS

The operation will be painless because of anesthetics—drugs that induce sleep or otherwise cause loss of feeling. In the little more than one hundred years since the discovery of ether, anesthesia has become a complex science requiring highly specialized knowledge. Leading medical schools now have departments of anesthesia, with well-trained specialists in charge, and there are many kinds of anesthetics to choose from, some affecting the whole body (general) and some only part of it (local).

GENERAL ANESTHETICS

These put the patient to sleep. *Ether*, which is administered through a cone or mask, is the most common form of general anesthetic, and causes the patient to sleep throughout even a long operation. *Nitrous*

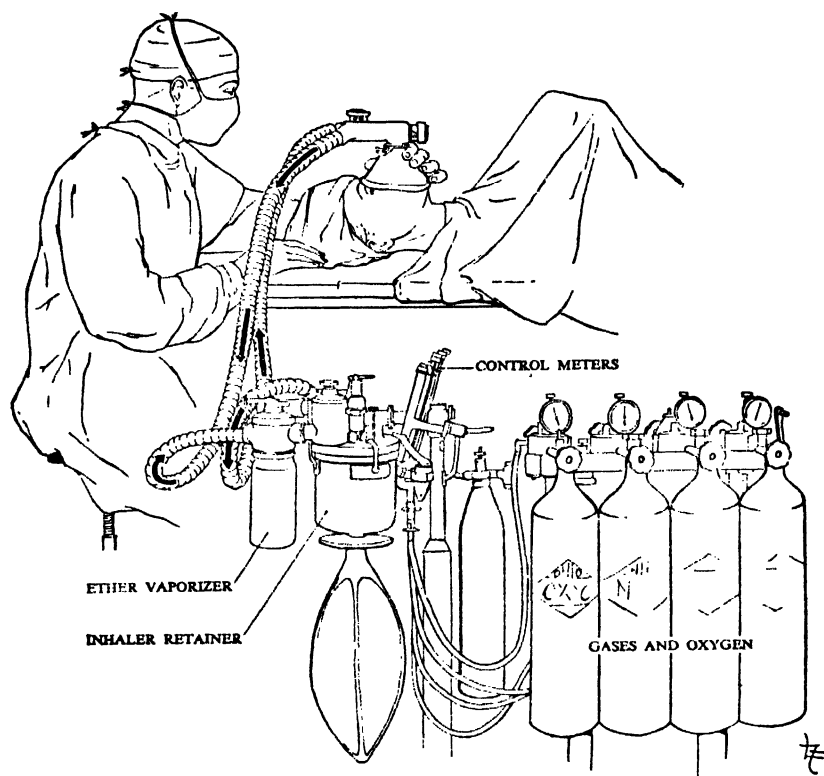


Illustration 31-1. GENERAL ANESTHESIA (ETHER, GAS).

oxide ("laughing gas") which is also inhaled is sometimes given for short procedures, or before the patient is given ether, since it induces sleep more pleasantly. *Chloroform*, once used as a general anesthetic, is now considered dangerous because it may damage the liver. *Cyclopropane* is another of the inhalation anesthetics. *Intravenous anesthetics* are general anesthetics which are administered through a needle inserted into a vein. For very short operations, a barbiturate can be used as an intravenous anesthetic; it has the effect of a superpowerful "sleeping pill." An intravenous anesthetic may also be given to induce sleep quickly before ether, or some other general anesthetic, is administered for the remainder of the operation.

LOCAL ANESTHETICS

Operations on the skin or the tissues just under the skin, or operations on the teeth, are frequently performed with local anesthetics. In this

method the anesthetic solution is injected into the operative area. *Novocain* and *procaine* are well-known local anesthetics. In about ten minutes all the pain nerves are deadened, and the surgeon can cut and sew without pain to the patient.

In some cases where a main nerve supplies the area to be operated upon, the doctor injects the anesthetic directly into the nerve. This is called a *nerve block*. If you have had much dental work, including extractions, you may have had both types of local anesthesia. In the lower jaw it is possible to inject directly into the main nerve and block pain from all the lower teeth on that side of the mouth. However, the main nerve trunk to the upper teeth is not so readily accessible, so the dentist may need to infiltrate the anesthetic around the tooth by injecting it in several places so that the anesthetic solution spreads all around the tooth and deadens all the nerve fibres.

Spinal anesthesia, a local anesthetic, is used in cases such as tuberculosis of the lungs where a general anesthetic like ether might be irritating to the lungs. In this type of anesthesia the doctor first injects the skin and the tissues underneath it with Novocain so that the patient will not feel any pain when he inserts a needle with anesthetic solution into a space around the spinal cord. This deadens the nerves of all the body below the place where it was injected. Spinal anesthesia can be used for operations in the lower part of the body, usually below the navel; these include appendicitis, hernias, and hemorrhoids. Operations on the stomach and gallbladder are rarely performed under spinal anesthesia because the anesthetic would have to be placed so high up in the spinal

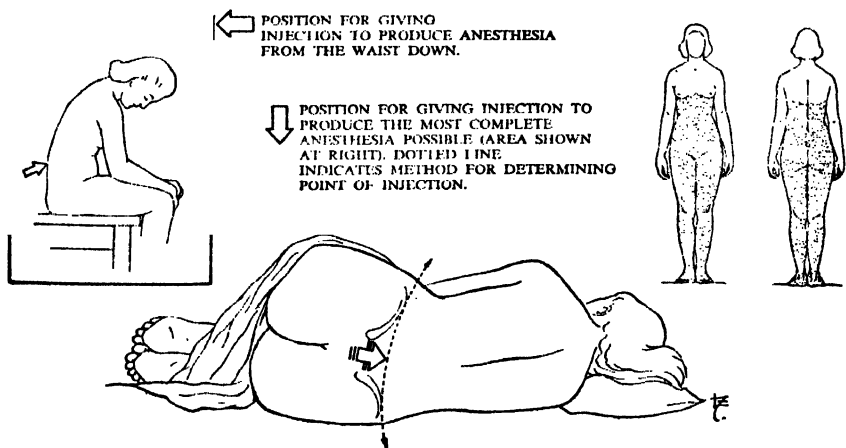


Illustration 31-2. SPINAL ANESTHESIA.

canal that the extensive paralysis of the nerves might interfere with the proper regulation of blood pressure and other vital functions.

Caudal anesthesia or *continuous caudal analgesia* is used during childbirth. A needle is inserted into the *sacral canal*, and a "pain-killer" such as *procaine* is injected. As the nerves of the *uterus* (womb) are numbed, the mother does not feel any pain although she remains completely conscious, and the child is not affected. However, the needle is left in place throughout the delivery, which means that a skilled anesthetist must supervise the procedure.

CHOOSING THE TYPE OF ANESTHETIC

It is the surgeon's responsibility to select a good anesthetic. The better hospitals all have good departments of anesthesia.

I advise patients to leave the choice of an anesthetic to the surgeon. However, if he says that he can do an equally good job with either a spinal or a general, you might ask your family doctor to help you make the decision. He should know your particular personality better than the surgeon. (This is very likely your first acquaintance with the surgeon.)

As I look back on my choices when I have been operated upon, I wish that I had always selected "going to sleep" when there was an equal choice between a general and a local or spinal. Local anesthesia does not always render the operative site 100 per cent free from all types of pain sensation during the entire course of the operation. On the other hand, some people who have tried both prefer a certain amount of discomfort to losing consciousness.

STERILIZATION AND ASEPSIS

While you have been sleeping, the surgeon has scrubbed his hands for a full ten minutes to rid them of dirt and germs, perhaps also using an antiseptic solution. The surgeon is meticulous about washing his hands because the gloves might break or might already have an invisible hole through which germs could enter the operative area.

The surgeon and his whole team aim to prevent any germs from entering the part of the body on which the operation is performed. Everything that touches the operative area is sterilized. Every doctor and nurse who assists goes through the same routine of scrubbing and putting on sterile clothes. All the instruments have been freed of germs by treatment with heat or chemicals. Each person in the operating room

wears a cap over the hair and a mask over the mouth and nose to prevent germs from entering the air.

Before the surgeon incises the skin, he sponges it carefully with disinfectant such as iodine, alcohol, or other powerful germ killers. Then he takes his position at the operating table along with his assistants and prepares the operative field.

THE OPERATION

The surgeon or an assistant covers the body with sterile sheets. He encircles the area upon which he will work with towels and special cloths. When he is ready to begin, only the operating area is exposed.

The surgeon cuts the skin with a special type of knife called a scalpel. He pulls back the edges of the skin with retractors. Then he methodically works to the area where he will find the thyroid gland or whatever structure he is working on. If there is bleeding as he cuts through the tissues, he clamps off the bleeding vessels with special forceps called hemostats.

The next stage in the procedure will depend on the type of operation he is performing. For example, he may remove the appendix, a tumor, or part of a gland; or he may repair a hernia, a perforated intestine, or a severed blood vessel. In any event he will work deftly, handling the tissues and organs as little and as gently as possible to avoid bruising them or shocking the patient. Even though the case may be a simple one—a clear-cut case of appendicitis, for which he has operated countless times—he is always on the alert. There *could* be something different about this patient; he *could* be suffering from something in addition to appendicitis. The surgeon concentrates upon the specific task he is performing, yet he never forgets the general condition of the patient.

THE OPERATING TEAM

Of course the surgeon is not working alone. An operation involves the teamwork of several highly skilled people. The chief surgeon has the big job of planning the incision, opening the operative area, finding the trouble, and repairing it. In an extensive operation the surgeon may be assisted by an experienced doctor (perhaps the head resident physician in surgery). The surgeon may need other doctors to help with various maneuvers during the operation and to keep the opening the right size with retractors. There is the anesthetist to administer anesthesia, and usually two nurses to hand instruments to the surgeon and perform the other incidental jobs necessary in an operation.

In many good operating teams the assistants and nurses are so attuned to the chief surgeon's needs that he hardly has to ask for an instrument. They frequently anticipate his requests and have the proper needle, clamp, or other instrument ready for him.

COMPLETION OF AN OPERATION

When the surgeon has completed his job, he ties or cauterizes bleeding vessels. He uses several different types of thread and catgut sutures for these procedures. He wants to make certain there will be no bleeding after the operation. This is tremendously important in internal operations involving the cutting of large arteries. For example, the removal of a kidney necessitates the severance of the main renal artery. If this vessel were to open and start bleeding after the operation, a serious internal hemorrhage would develop that could threaten the life of the patient. Surgeons anticipate such dangers and prevent them by tying important arteries twice.

After a careful check to make sure that no sponges or instruments have been left in the operative site, there comes the final step in the operation, the closing of the incision. This may be done with thread sutures or, sometimes, with metal clips. If the incision is in the neck (as it would be for a thyroid operation) the surgeon makes the incision in one of the natural folds of the skin; he will use clips or other materials for closing the incision so that the minimum scar will appear.

In some operations a drainage tube may be led out from the area of operation through part of the incision. This drainage tube may be needed to help siphon off pus, or excess fluid, or may drain the bile temporarily in operations on the gallbladder. It is usually removed in a few days.

EFFICIENCY, NOT MELODRAMA, CHARACTERIZES OPERATIONS

The most noticeable thing about an operation is the smooth, methodical, and cooperative manner in which it takes place.

A lawyer friend, watching an operation with me not long ago, commented, "I was struck with how impersonal it all seemed."

He was right; it was impersonal, and in such an atmosphere the surgeon and his assistants work most efficiently. The attention of the operating team is concentrated to a remarkable degree upon the task being undertaken. Each knows his job and does it competently, almost automatically. If the surgeon or his assistant should become emotional about

an amputation or the discovery of a cancer, he might not work at his best; for this reason doctors usually do not operate on members of their own families.

IS SPEED IN SURGERY DESIRABLE?

Not so many years ago surgeons prided themselves on the speed with which they could perform an operation. The modern surgeon, however, is not pressed for time because pain has been controlled by good anesthesia, and shock can be prevented by transfusions of blood made available by modern blood banks. In addition, the antibiotic and nutritive fluids prepare the patient so well for the operation that the surgeon can be relaxed and sure of the situation.

Speed is still desirable under certain circumstances, such as accidents involving severe hemorrhage. But in the main, it is less important than it is for the surgeon to take time enough to handle the tissues very carefully, and thus avoid injuring them, which was one of the main causes of danger and difficulty of surgical operations in the past.

THE PATIENT'S PART IN RECOVERY FROM AN OPERATION

After the operation has been completed, you will awaken in another room, either your own or one on the operating floor. Do not be alarmed if you find yourself in an oxygen tent or receiving fluid by means of a tube inserted into a blood vessel. Such techniques were once a last resource, but are used widely today to contribute to the patient's comfort and speed his recovery. Nurses should not be asked, either by you or your family, what these procedures are for. It is generally regarded as inadvisable for a nurse to explain the doctor's orders. There are many reasons for this, including the fact that a nurse may care for a number of patients and will not know enough about the case, including the personality of the patient, to answer questions in the best way.

You and the doctors and nurses now have work to do to *prevent complications*. Major complications can develop following an operation, but due to the care taken by doctors they are usually prevented. In fact, most of the terrible things you have heard about complications following surgery belong to the past. Modern surgery has made phenomenal advances in the past few decades, including the prevention of the troubles that followed operations.

There is little likelihood that you will develop a blood clot in the lungs,

collapse of the lungs, or infections if you cooperate with your doctors and nurses. It has been found that moving the legs helps prevent the formation of blood clots in the veins of the lower part of the body. These clots are dangerous because parts of them may break off and travel to the lungs where they can block a major blood vessel, and cause serious trouble. This complication is prevented by the exercises that you perform. The practice of getting patients out of bed and having them walk even the first or second day after a major operation, helps prevent these and other complications. This technique is called *early ambulation*. After some types of operation it is necessary to breathe deeply and to cough. This helps expand collapsed portions of the lungs and wards off pneumonia; it may be painful when the patient has a large incision or one that moves a good deal with coughing.

These postoperative methods, plus other improved techniques such as the use of intravenous fluids, pay off good dividends in getting patients out of the hospital in remarkably brief periods of time compared to previous decades. And today's patients feel much stronger after major surgery, too.

WHAT IS ELECTIVE SURGERY?

Many operations, such as those for acute appendicitis or for perforation of the stomach by an ulcer, compound fracture, or bullet wounds, are performed on an emergency basis where every minute or hour is important.

Other operations do not need to be performed the moment the diagnosis is made, but can wait. If there is no hurry, the surgery is called *elective surgery*. Such operations can be put off until a time when things are apt to be under less pressure as far as the patient, the doctor, and the hospital are concerned. Among the operations that come under this category are: repair of hernias, hemorrhoids, varicose veins, plastic surgery, and many cases of enlarged tonsils.

Other operations may fall in between the emergency and the elective. For example, if a tumor of the breast has been diagnosed, the doctor will worry about cancer. He does not need to operate that day, but he does not want weeks or months to elapse because in the interim a small, curable cancer might enlarge to a dangerous stage.

Have confidence in your doctor. If he advises an operation, consider it seriously.

In some conditions diagnosis is difficult because it cannot be checked by x-rays or other positive tests, and the doctor must rely on his judgment, based on his experience and ability. Among these conditions are

tumors of the breast, tumors of the uterus (sometimes called fibroids), enlarged prostate gland, and gallbladder disease. Your doctor will probably welcome the suggestion that a specialist be called in or—if you live in a rural district—that you go to the nearest medical center for examination. In cases of major surgery or when there is any doubt in your mind, ask for an examination by a qualified specialist in the field.

Health Insurance and Community Services

UNTIL FAIRLY RECENTLY, people used to say with a great deal of justification that only the very rich and the very poor could obtain adequate medical care: the rich could pay for it and the poor could get it free of charge in clinics or hospitals where excellent doctors contributed their services. Things have changed today, mainly because many people with modest incomes have *insurance* covering the costs of medical care, and also because of a new approach to the problem of health, so that “charity” is being replaced by *community services*.

INSURANCE PLANS

Countless individuals and groups of people now take out insurance on their health in the same way that they insure their homes against fire and their cars against theft. By making payments regularly, they receive benefits that will pay all or part of the costs if they are ill, or have an accident, or require an operation. Some people also take out insurance to provide an income in case they are unable to work, but I shall not discuss them in this chapter. In the main, medical costs are met by insurance plans such as:

1. The Blue Cross and Blue Shield.
2. Health and accident insurance policies offered by commercial insurance companies.
3. Independent plans through unions, industries, businesses, schools, colleges, consumer and community groups, and private group clinics.

1. *Blue Cross* and *Blue Shield* are the best known of these plans. In 1952 there were over 43 million subscribers to these nonprofit organizations. There are 87 such plans, covering practically every state of this country as well as Canada and Puerto Rico.

Blue Cross is designed to pay all or part of hospital bills, and Blue Shield to pay those of the doctor. "Extras" are also provided for. It is possible to subscribe to either one or to both of these plans. The individual chooses his own hospital and doctor from the list of reputable physicians and institutions.

These plans are primarily intended for groups and families. Having joined as a group member, individuals can continue on a direct-payment basis if they leave the group or the community. Individual membership is also available to anyone who is not eligible for group or family membership, provided he or she is under 65 and in reasonably good health; however, these rates are higher. Answering a simple health questionnaire is all that is necessary; no physical examination is required.

There are a number of Blue Cross and Blue Shield plans, the payment varying according to the benefits. For example, in 1954, a person paying \$1.30 a month received, if he needed to be hospitalized, \$7.00 a day to pay all or part of his board and general nursing care; in addition, certain extras such as laboratory tests, medicines, and hospital operating-room expenses were paid for. Higher rates entitled him to a larger amount for a more expensive hospital room. He would be eligible for hospitalization benefits for most illnesses and operations as soon as he joined the Blue Cross. In some instances, however, he would have to belong for a year before becoming eligible. For example, he would not receive the money for his hospital bills if he had an operation for hernia right after subscribing to the Blue Cross.

Joining the Blue Cross and/or Blue Shield is an excellent way of protecting oneself from the burden of bills for illnesses, accidents, and operations. It is well worth your while to find out whether or not you are eligible, and to consider which plans best fit your circumstances, based on such considerations as your income and the rates charged by physicians and hospitals in your community. If you do not know how to get in touch with the Blue Cross and Blue Shield in your state, write for information to the Blue Cross Commission of the American Hospital Association, 425 North Michigan Avenue, Chicago 11, Illinois.

2. *Commercial Insurance Companies* offer many different kinds of health and accident insurance policies. It is usually possible to find one that meets the needs of the individual. They are particularly valuable for those who are not eligible for Blue Cross and Blue Shield, or who want additional protection; many members of Blue Cross and Blue Shield have policies with commercial insurance companies.

These companies are regulated by laws, but if you have any doubt about the reliability of the one you are considering, you can check the matter at your bank or through your chamber of commerce. I should also like to urge you to consider very carefully your own situation, and discuss

the matter fully before deciding how much and what kind of insurance you need. Insurance company agents are usually very helpful in explaining the various possibilities if you tell them about your income and your needs. Material describing these policies and the benefits they offer can be obtained from the commercial insurance companies; you can obtain their addresses from advertisements, from the telephone directory, or through the chamber of commerce in the nearest city.

3. *Other Insurance Plans.* There are a great many independent health insurance plans, and many possible variations of each of them. For example, an individual, a school, a club, or a business can make arrangements with a private medical clinic (see page 536) which will provide free care under specified circumstances in return for monthly or annual payments. Some unions and some businesses or industries have their own insurance plans, the costs of which may be borne by the organization or the individuals in it. The United States Government made a survey of over 400 plans for prepayment of medical care in 1950. Many of them are excellent. However, it is wise to make certain by consulting your bank or the Better Business Bureau.

CONSIDER INSURING YOUR HEALTH NOW

As a doctor, I know the financial problems people face when illness strikes. I know, too, that they often suffer needlessly or even endanger their health because they feel they cannot afford treatment or an operation. Time after time I have heard people say such things as, "I know I should have had something done about my hernia the moment I noticed it, but that was the month after Mary told me we were going to have a baby, and she and I couldn't both afford to go to the hospital." Or, "Can't the children wait another year before having their tonsils out? We still haven't paid for Father's broken hip." Or, "I know John would get well much faster if he didn't worry so much about paying for his sickness."

Take some time today to think over your health insurance needs. First of all, find out whether you are already eligible for any benefits—for example, as a veteran of World War II (see page 565) or a member of a trade union. Then don't waste any time in investigating and obtaining insurance that will pay for your health.

IMPORTANT FREE MEDICAL SERVICES

In recent years public-health groups have gone more and more into the field of personal health services for general health maintenance and

for certain special diseases. Public-health departments and voluntary health agencies offer many PERSONAL, FREE SERVICES that may be worth hundreds of dollars to you or, even more important, provide you with some vital medical assistance you would otherwise be unable to afford.

These free personal health services are not "charity." They are an essential part of the country's over-all health program, as necessary in their way as free vaccination or the elimination of malaria by mosquito control. You have a right to, and *should* use these services if you need help in your own fight against our common enemy, ill health and disease. It is important that you learn the types of services your particular health department provides. They may be of tremendous value if chronic illness should strike you or your family, or if you have young children who need frequent dental and pediatric care.

Free services are made available by the health departments in many cities for the following important medical problems:

- Alcoholism
- Cancer detection
- Dental diagnosis and care for school children
- Diabetes
- Infant care and well-baby clinics
- Mental-health clinics
- Nutrition instruction
- Nutritious lunches for school children
- Physical examination of school children
- Prenatal care for the pregnant mother
- Tuberculosis
- Venereal disease clinics

Under certain circumstances almost any family would need one or more of these services. A patient with a chronic disease such as mild or recovering tuberculosis may be able to finance the cost of seeing the doctor but not the additional burden of frequent x-rays or the laboratory tests on the sputum. The public-health department will frequently provide these essential x-ray and laboratory tests free.

As is pointed out in the chapter on teeth, many large families need to obtain part of the dental care required on a free or reduced-cost basis. In such cases, your health department may provide the dental service you need, or can suggest adequate clinics.

People can often handle the expenses involved in an occasional trip to the doctor and the purchase of a few medicines. But when some severe

and long-lasting illness occurs, they find the burden of paying for adequate medical care too heavy for them to carry.

Your doctor understands better than you may imagine the tremendous financial burdens imposed on a family by heart disease, nervous breakdowns, or other severe disabling sickness. He will be very willing to cooperate with the health department in having his services supplemented by the public-health nurse, the public-health nutritionist, or by whatever auxiliary care the public-health department gives.

Think how much these services can mean to you or to your entire family. It is too bad, indeed, that so few people even know these services exist.

One of the smartest things you can do is to write a card *now* to your health department asking for a description of the types of services it provides individual citizens. They may offer you free care that can prevent medical expenses from becoming overwhelming.

EVERY COMMUNITY SHOULD HAVE A GOOD LOCAL HEALTH DEPARTMENT

Less than a century ago American cities were such unhealthy places to live in that the life expectancy of a child was about half of what it is today. Children died by the thousands from summer dysentery caused by bacteria in milk and other foods; adults were carried off with typhoid fever. Tuberculosis was rampant and was called the "white plague."

The improvement in health standards has now eliminated typhoid fever, dysentery, and most other water- and food-borne diseases. This has been accomplished by proper sanitation of water and sewage and by the strictly enforced pasteurization of milk and milk products.

In fact the American city is at present a healthier place in which to live than the rural areas. There is a health department in almost every city, although many towns and counties have only health officers, and there are still far too many areas which lack any local health facilities. One of the great needs in our national public-health program is the provision of improved health facilities in our rural areas and small communities. If you live in an area which does not provide health services, you should raise a vigorous protest and arouse your neighbors until you get an adequate health department. In the meantime you can obtain necessary information and help from your state department of health by writing the department of health at your state capitol. The United States Public Health Service, Washington 25, D.C. will always answer your questions about public-health matters, as will the voluntary organizations listed on page 587.

VOLUNTARY HEALTH AGENCIES

In addition to the health facilities offered by tax-supported agencies such as the local health department, your state health organization, and the United States Public Health Service, there are many organizations that offer valuable health services. They are supported by contributions from individuals, foundations, corporations, trade unions, and the like. We all know about the National Foundation for Infantile Paralysis, the American Cancer Society, and several others of the large and long-established ones. However, it is good to scan the following list and see how many organizations exist, and what varied areas of illness they cover.

If you, a member of your family, or a neighbor has a continuing problem with rheumatic heart trouble, arthritis, deafness, diabetes—to list but a few examples—you should communicate with these organizations to learn precisely what services they render. Many of them are able to help finance special problems connected with rehabilitation and the long pull of nursing care required by chronic illness. For example, a child with nephrosis (kidney disease) may recover after as long as ten years of disability, during which period he might require almost continual nursing care. Surely any parent faced with such a difficult problem would want to communicate periodically with the American Nephrosis Foundation and learn about special clinics where the child may receive the benefit of new treatments and special nursing.

HEALTH AND WELFARE ORGANIZATIONS

ACCIDENT PREVENTION

National Safety Council, 425 North Michigan Avenue, Chicago 11, Ill.

ALCOHOLISM

Alcoholics Anonymous (National), Box 459, Grand Central Annex, New York 17, N.Y.

National Committee on Alcoholism, 2 East 103rd Street, New York 29, N.Y.

National Institute of Mental Health, Public Health Service, Department of Health Education and Welfare, Bethesda 14, Md.

Salvation Army: Some branches have special workers in this field.

Local clinics and welfare agencies in Boston, Chicago, Minneapolis, New York, Richmond (Va.), and San Francisco.

ARTHRITIS AND RHEUMATISM

The Arthritis and Rheumatism Foundation, 23 West 45th Street, New York 36, N.Y.

Information on all the rheumatic diseases and aid for those unable to afford treatment.

BLINDNESS

Braille Institute of America, Inc., 741 North Vermont Avenue, Los Angeles 29, California.

Information, case work, books in braille and other types for the blind at cost; lending library service.

Hadley Correspondence School for the Blind, 620 Lincoln Avenue, Winnetka, Ill.

Tuition-free school for the education and rehabilitation of the blind.

Matilda Ziegler Foundation for the Blind, 250 Park Avenue, New York 17, N.Y.

Supplies a limited quantity of radios, typewriters, and other equipment at reduced prices and provides (through the *Matilda Ziegler Magazine for the Blind*, Monsey, New York) a free monthly magazine to every blind person, in braille, New York point, or moon type.

American Foundation for the Blind, 15 West 16th Street, New York 11, N.Y.

Provides information on all aspects of blindness.

National Council to Combat Blindness, Inc., 30 Central Park South, New York 19, N.Y.

National Society for the Prevention of Blindness, Inc., 1790 Broadway, New York 19, N.Y.

Information on eye care and safety.

The Seeing Eye, Inc., Morristown, New Jersey.

Raises and trains Seeing Eye dogs. Trains blind persons in proper care and handling of the dogs.

National Industries for the Blind, 15 West 16th Street, New York 11, N.Y.
Rehabilitation of the blind.

Eye Bank for Sight Restoration, Inc., 210 East 64th Street, New York 21, N.Y.

Arranges for the donation of eyes for corneal transplants. (There are now eye banks in New Orleans and Boston, also.)

CANCER

American Cancer Society, Inc., 521 West 57th Street, New York 19, N.Y.

Information on diagnosis and treatment of cancer. Aid to needy patients.

National Cancer Institute of the National Institute of Health, USPHS, Bethesda 14, Maryland.

CEREBRAL PALSY

United Cerebral Palsy Associations, Inc., 369 Lexington Avenue, New York 17, N.Y.

Provides information on cerebral palsy and the possibilities for those affected.

American Academy for Cerebral Palsy, 4743 North Drake Street, Chicago 25, Ill.

CLEFT PALATE

Lancaster Cleft Palate Clinic, 24 N. Lime Street, Lancaster, Pa.

Treatment and speech therapy for children with cleft palate.

CHRONIC DISEASES

Central Service for the Chronically Ill, of the Institute of Medicine of Chicago, 86 East Randolph Street, Chicago 1, Ill.

Organizes care for the chronically ill. Similar centers in Milwaukee, Newark and San Francisco.

Shut-In Society, Inc., 221 Lexington Avenue, New York 16, N.Y.

Provides correspondence for the handicapped.

National Society for Crippled Children and Adults, 11 South LaSalle Street, Chicago 3, Ill.

Provides information on all types of crippling conditions. Local units have professional consultants and provide employment service.

Institute for the Crippled and Disabled, 400 First Avenue, New York 10, N.Y.

Gives educational and vocational treatment and advice for rehabilitation. Serves cripples, mutes, hard of hearing, and certain types of heart cases.

Goodwill Industries of America, 1222 New Hampshire Avenue, N.W., Washington 6, D.C.

Provides employment for handicapped persons in a suitable environment.

National Amputation Foundation, 432 West 44th Street, New York 36, N.Y.

American Federation of the Physically Handicapped, Inc., 1370 National Press Building, Washington 4, D.C.

Walter Scott Foundation for the Aid of Crippled Children, Inc., 441 Lexington Avenue, New York 17, N.Y.

Disabled American Veterans, 1423 East McMillan Street, Cincinnati 6, Ohio.

Aids disabled veterans in hospitals, insurance, employment and similar matters.

DEAF AND HARD OF HEARING

American Hearing Society, 817 Fourteenth Street, N.W., Washington 5, D.C.

Provides information (a nominal charge for posters, leaflets, etc.), and maintains local chapters handling projects such as lip-reading classes, social contacts, etc.

Volta Bureau for the Deaf, 1537 35th Street, N.W., Washington 7, D.C.

Information and aid for the deaf, and education for the deaf.

National Association of the Deaf, 2495 Shattuck Avenue, Berkeley 3, California.

Aims to further the employability and status of the deaf.

DIABETES

American Diabetes Association, Inc., 1 East 45th Street, New York 17, N.Y.

Information on diagnosis and treatment of diabetes. Encourages establishment of summer camps for diabetic children.

DRUG ADDICTION

Narcotic Rehabilitation Center (Happiness Exchange Foundation), 214 West 42nd Street, New York, N.Y.

The Public Health Service maintains two hospitals for treating drug addicts.

EPILEPSY

National Epilepsy League, Inc., 130 North Wells Street, Chicago 6, Ill.

Information on epilepsy and facilities for treatment.

United Epilepsy Association, 113 West 57th Street, New York 19, N.Y.

Information on epilepsy.

HEART DISEASE

American Heart Association, 44 East 23rd Street, New York 10, N.Y.
Provides information relating to the prevention and care of heart disease. Includes rheumatic fever.

INFANTILE PARALYSIS (POLIOMYELITIS)

The National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York 5, N.Y.

Provides information and aids patients who cannot afford treatment.

Georgia Warm Springs Foundation, 120 Broadway, New York 5, N.Y.

Aids sufferers from aftereffects of polio.

Sister Elizabeth Kenny Foundation, 2400 Foshay Tower, Minneapolis 2, Minn.

Provides information on polio and sponsors treatment centers and research.

KIDNEY DISEASE

The National Nephrosis Foundation, Inc., 143 East 35th Street, New York 16, N.Y.

MATERNITY

Maternity Center Association, 48 East 92nd Street, New York 28, N.Y.

Publishes pamphlets and conducts classes to instruct expectant mothers and fathers. Consultants aid with problems of family living.

MENTALLY ILL OR RETARDED

(See list of organizations on page 279.)

National Association for Mental Health, Inc., 1790 Broadway, New York 19, N.Y.

Gives advice and information on mental illness or deficiency. Many publications available at low cost.

National Association for the Friends and Parents of Mentally Retarded Children, 565 Hale Avenue, Cincinnati 29, Ohio.

American Association of Mental Deficiency, P.O. Box 96, Willimantic, Conn.

MULTIPLE SCLEROSIS

National Multiple Sclerosis Society, 270 Park Avenue, New York 17, N.Y.
(Also known as "AARMS.")

Information about multiple sclerosis, and aid to those disabled by it and other diseases of the nervous system.

MUSCULAR DYSTROPHY

Muscular Dystrophy Associations of America, Inc., 39 Broadway, New York 6, N.Y.

National Foundation for Muscular Dystrophy, Inc., 250 West 57th Street, New York 19, N.Y.

REHABILITATION

American Rehabilitation Committee, Inc., 28 East 21st Street, New York 10, N.Y.

Maintains a rehabilitation center for the disabled.

National Rehabilitation Association, 1025 Vermont Ave., N.W., Washington 5, D.C.

Rehabilitates the mentally and physically handicapped.

The Cleveland Rehabilitation Center, 2239 East 55th Street, Cleveland 3, Ohio.

(Similar centers in Virginia and New Jersey)

New York University-Bellevue Medical Center, Institute of Physical Medicine and Rehabilitation, 400 East 34th Street, New York 16, N.Y.

Also the Disabled Home Makers' Program, at the above address.

Audiology and Speech Correction Center at Walter Reed Army Hospital, Washington 12, D.C.

Office of Vocational Rehabilitation of FSA, Washington, D.C.

Administers the Federal-State program for rehabilitating handicapped persons.

Department of Defense, Washington, D.C.

Employs disabled civilians and rehabilitates disabled servicemen and women.

Veterans Administration, Washington, D.C.

Rehabilitates disabled veterans.

State rehabilitation programs, usually administered through the Department of Education or through a special board.

Welfare and Retirement Fund, United Mine Workers of America, 907 Fifteenth Street, N.W., Washington 5, D.C.

STERILITY

The Planned Parenthood Federation of America, 501 Madison Avenue, New York 22, N.Y.

Gives information to childless couples, birth control information to doctors; publications on marriage and parenthood.

Many local sterility clinics associated with hospitals and Planned Parenthood Leagues.

TUBERCULOSIS

National Tuberculosis Association, 1790 Broadway, New York 19, N.Y.

Provides information on all aspects of tuberculosis, and sponsors diagnostic services.

State and local health departments provide for treatment of tuberculosis patients, and state agencies aid in rehabilitation after recovery.

UNMARRIED MOTHERS

The Children's Bureau, Social Security Administration, Department of Health, Education and Welfare, Washington 25, D.C.

National Association on Service to Unmarried Parents, 8615 Euclid Avenue, Cleveland 6, Ohio.

Florence Crittenton Homes Association, Inc., 608 South Dearborn Street, Chicago 5, Ill.

Has branches in many cities.

The American Red Cross, The Salvation Army, and other service groups give aid and assistance to married and unmarried mothers.

VENEREAL DISEASE

American Social Hygiene Association, 1790 Broadway, New York 19, N.Y.

Supplies many publications free or at low cost covering various aspects of venereal disease or social hygiene.

PART FIVE

**YOU AND YOUR
SPECIAL PROBLEMS**

CHAPTER 33

The Killers

AND HOW TO OUTWIT THEM

I AM purposely calling the diseases I discuss in this chapter The Killers, in order to drive home your need to be on guard against them. In time of war, every soldier on active duty knows that failure to be aware of the existence of danger may cause him to walk into an ambush. We must all recognize the danger of our worst enemies, the killing diseases.

My choice of a subtitle, *How to Outwit Them*, is equally deliberate. These enemies are powerful. But they are not *all-powerful*. Medical science can, with your help, prevent, control, or cure them. We are no longer at the mercy of those age-old murderers, pneumonia, tuberculosis, and appendicitis. Even cancer can often be prevented or cured. Modern methods of treatment enable many people with high blood pressure, diabetes, and hardening of the liver (cirrhosis) to live out their *normal life expectancy*.

"Hold on, doctor!" you are probably saying. "Take a look at the statistics. Aren't heart disease, cancer, and the other diseases you mention, the chief causes of death?"

They are, it is true. But my point is: they can often be outwitted. And even when we can't be victorious, we can force these enemies into an advantageous truce. Take the case of a man who, according to the records, has died of cancer of the prostate. *But*, by proper treatment, the disease was controlled for a considerable number of years, so that he led a fairly active, good life until he was seventy-three. We have to admit that cancer won the battle—but under those circumstances, it was far from being an "unconditional surrender." Similarly, to die of high blood pressure at the age of forty is a tragedy; but it is quite a different story when we see it recorded as the cause of death in an aged person. In that case, it practically amounts to "dying of old age."

OUR MAIN ENEMIES

Fifty years ago, pneumonia, tuberculosis, and inflammations of the intestines (diarrhea and enteritis) were the three leading killers ac-

according to the statistics in New York City. Today, pneumonia and tuberculosis are only one tenth as dangerous as they used to be, while diarrhea and enteritis are no longer entitled to a place among the "Ten Top Killers."

Cancer and diseases of the heart are now at the head of the list. Look at the following table showing the killers of yesterday and today, so that you will know your worst enemies.

TABLE 17
CONTRAST BETWEEN YEARS 1900 AND 1950 IN THE
TEN LEADING CAUSES OF DEATH

	<i>Deaths Per 100,000</i>
1900	
Pneumonia	304
Tuberculosis	280
Diarrhea and enteritis	183
Nephritis	161
Heart disease	128
Accidents	87
Apoplexy	81
Cancer	67
Ill-defined and unknown	65
Diseases of early infancy	60
1950	
Heart disease	438
Cancer	195
Apoplexy	65
Diseases of early infancy	40
Accidents	37
Pneumonia	32
Tuberculosis	29
Diseases of liver and gallbladder	22
Diabetes	20
Diseases of the arteries	16
(Figures are for New York City)	

PREPAREDNESS

Here are some *general* rules to follow in order to minimize the danger of attack, and increase your chances of victory. This is a checklist; I discuss these points in detail elsewhere in this book.

1. Have periodic medical checkups (see page 541).
2. Recognize, and report promptly, all "warning signals" that occur between checkups (see page 556).

3. Keep your weight normal, or slightly below normal, after you reach middle age (see page 43).

4. If you have, or are threatened by, a disease, study the information about it given in this book. Do this so that you can be a *good patient*, but *NOT in order to treat yourself*. Trust your doctor, and cooperate with him. Follow his instructions. Let *him* do your worrying for you.

5. Keep in touch with your doctor, and when this is impossible, get another doctor. Medical science is continually developing new medicines and treatments for diseases, including the Killers. You probably won't learn about them unless you have a doctor. Only too often, people are told that no treatment can help them, and then decide "There's no use seeing a doctor when nothing can be done for my disease." Meanwhile, for example, a new operation is developed which, by correcting scarred heart valves, could relieve the heart condition from which they are suffering. Similarly, a number of "incurable" cases of tuberculosis are back at work because a badly diseased lung can now be removed surgically.

6. Keep away from quacks, faith healers, and advertised "cures." Shun them as *allies* of the Killers. Adopting a "Why not try them and see?" attitude may prove *fatal*. (See page 533).

HEART DISEASES AND OTHER DISEASES OF THE BLOOD VESSELS

It may seem strange to you that I include diabetes and kidney diseases such as nephritis in this section. I do so because the worst effects of these diseases are frequently seen in the heart or the vascular system. Doctors usually regard the diseases I discuss here as belonging to one "family" of ailments—the *cardiovascular-renal*. I take up the subjects in the following order:

- Symptoms of Heart Disease
- Congenital Heart Disease
- Syphilitic Heart Disease
- Rheumatic Heart Disease
- Coronary Heart Disease
- Hypertension (High Blood Pressure)
- Diseases of the Kidneys
- Diabetes
- Hardening of the Arteries
- Strokes (Also called "Apoplexy" and "Shocks")

I am dealing with strokes last because they can result from high blood pressure, nephritis, diabetes, and many forms of heart trouble.

The main job of the heart is to circulate the blood through the body (see page 107). The healthy heart can do this tremendous task without difficulty. But there are many diseases, some simple, others complicated, which can injure this wonderful piece of machinery.

Heart disease leads the list of Killers today by a considerable margin. We must not overlook the fact that this is due at least in part to the years that have been added to our lives. People who might formerly have died of pneumonia or some other infectious disease while they were in their forties, now survive to be sixty-five or more; and heart disease is more common in older than it is in young people. But we must also not overlook the fact that heart disease is the leading Killer, and it is well worth while to learn how it can be outwitted.

SYMPTOMS OF HEART DISEASE

There are certain general symptoms that indicate there is something wrong with the heart. They do not definitely *prove* the existence of heart disease. But they are sufficiently important so that you should see a doctor if you discover any of them. By doing so promptly, you will either avoid needless worry, or be in a favorable position to cope with the enemy before it becomes firmly entrenched.

Your doctor will examine your heart and perform certain tests to determine what the symptom means. He may find it necessary to refer you to a heart specialist who is trained to make further tests such as an electrocardiogram in order to make certain whether or not your heart is sound, and if not, the nature and extent of the difficulty.

1. *Increasing dyspnea (shortness of breath) on exertion.* Almost everyone normally becomes short of breath or even gasps for air after rushing to catch a bus or climbing a number of stairs. Breathlessness is also apt to occur, to a slight extent, as people get older, especially if they are overweight. But if activity you formerly were able to carry out without trouble begins to leave you quite breathless, be sure to consult your doctor. It may indicate heart trouble, though it is not an absolute sign. For example, nervous tension causes some people to feel as though they can't draw a deep breath when they need one, or makes them sigh frequently in a breathless manner.

2. *Nocturnal dyspnea (shortness of breath at night).* Be sure to see a doctor if you awaken from sleep at night with a choking sensation or a feeling of suffocation. Some people with heart trouble find they require a number of pillows to prop them up at night in order to make breathing easier.

3. *Edema (swelling) of the ankles.* If your ankles swell at the end of the day, consult your doctor. It may be due to poor circulation. Women, and sometimes men, find their ankles have a tendency to become puffy if they have to stand a great deal, especially in the summer. In some women, puffiness occurs before menstrual periods. People with varicose veins may also find their ankles swell a little. These conditions are nothing to worry about. I am concerned about a swelling that differs from the one to which you are accustomed, especially if it interferes with putting on your shoes, or if you can make a deep mark in it by pressing with a finger. *If in doubt, ask your doctor.*

4. *Angina pectoris (pain over the heart or in the middle of the chest).* This may be a very important clue to the fact that something is wrong with your heart. The sensation may be described as feeling as though a rock has been placed on the chest or over the heart. It may be a sharp pain, or a "tight" feeling, as though one were wearing a vest that should be unbuttoned. It usually follows exercise or excitement, and sometimes a heavy meal. Ordinarily it lasts only a minute or two, and is relieved by remaining motionless.

If you experience such a sensation, especially if you are over forty, be sure to tell your doctor. It may only be a gas pain or indigestion. But on the other hand, a serious heart condition may reveal itself by no sign except "heaviness" or pain. Don't try to determine which it is. Many people mistake gas pains for heart trouble, or wrongly diagnose a real heart condition as indigestion. A competent physician will not make this mistake. However, he may have to see you a number of times; and laboratory tests, such as the electrocardiogram, may be required before he can be certain.

5. *Other symptoms.* Fortunately, *dizziness*, *fainting spells*, *blue lips*, attacks resembling *asthma*, and *extreme fatigue* usually distress people sufficiently to make them consult a doctor. They should be regarded as warning signals. Spitting or coughing up *blood*, or a *cough* that persists in spite of treatment, can also indicate heart disease.

Palpitation (fluttering of the heart) is NOT in itself a danger signal. Many healthy people have "extra beats" of the heart, or feel as though it had "flopped over" or stopped for a moment. It may occur when they get excited or overtired, or have been drinking too much coffee or smoking too much. It does not indicate anything harmful. People with heart disease may also experience palpitation, but they will usually have other symptoms as well.

Paroxysmal tachycardia is the medical term for a certain type of palpitation. It starts suddenly and ends abruptly, with the heart beating furiously; sometimes it lasts for hours or even for days. This, of course, is not the same as the normal speeding up of the heart due to exercise or

excitement. It is usually not serious and may not be related to any organic heart disease. People who are nervous or worried may have frequent attacks of paroxysmal tachycardia and live to a ripe old age without developing heart disease. It is a functional, not an organic, ailment, in the majority of instances.

Functional heart disease, also called "*nervous heart*," may bring about many symptoms of organic heart disease. However, there is no change in the organs to account for this. "Nerves" or emotional tensions are usually responsible (see Chapter 12, page 8).

CONGENITAL HEART DISEASE

This means heart trouble which is present at birth. One example you may have heard of is a "blue baby." In these babies, born with a fortunately rare abnormality, the blood does not flow properly from the heart to the lungs. Some congenital abnormalities do not reveal themselves until later in life.

Care of the pregnant mother has helped to reduce congenital heart trouble. For example, since the discovery that an unborn baby's heart *may* be injured if the expectant mother has German measles at a certain period of the embryo's development, pregnant women are careful to avoid this otherwise harmless disease (see page 332).

Great progress is being made in correcting or improving congenital heart conditions. Until recently, doctors would say helplessly, "Nothing can be done." Today, almost miraculous results are being obtained in some types of congenital heart trouble, by means of newly devised surgical operations. Your doctor should be able to tell when such a condition exists and how it can best be studied by experts in the field. Elaborate equipment and tests may be needed for an exact diagnosis, and a highly skilled surgical specialist is required to perform these operations. This is possible only in the best hospitals and medical centers.

SYPHILITIC HEART DISEASE

Syphilis can damage the circulatory system, most often by injuring the aorta, the main artery leading from the heart. It is especially dangerous when it damages the aortic heart valve which separates the heart from this great blood vessel.

The germs of syphilis invade the wall of the aorta and the aortic heart valve, causing weakness and scarring. The valve may leak, so that some of the blood pours backward instead of forward from the heart. Then the heart has to do the extra work of trying to force the blood out again.

Impairment of the heart by syphilis is far less common than it used to be, thanks to the widespread attack on this dangerous disease. When the day finally comes—as it can and must—that syphilis is wiped out completely, syphilitic heart disease will also be eliminated. (See page 650 for a discussion of the prevention of syphilis, and other aspects of this disease.)

RHEUMATIC HEART DISEASE

Rheumatic fever is a frequent cause of heart disease. Children and young adults are most often the victims, but many adults suffer heart injury because of rheumatic fever. Sometimes the signs of it do not appear until the person has reached middle age. (See page 416 for a full description of rheumatic fever.)

Rheumatic fever may injure the covering of the heart, the heart muscle, the lining of the heart, and the valves. Damage to the valves creates serious mechanical hindrances to the proper functioning of the heart—pumping the blood. The valves may leak, as in syphilitic heart disease, or the opening of the valve may shrink so that it is not wide enough to permit the blood to flow through as it should.

BACTERIAL ENDOCARDITIS

This serious disease was formerly invariably fatal, but can now often be cured with penicillin and other antibiotics. It is separate and distinct from rheumatic fever, but I mention it here because it most commonly occurs in people whose heart valves have already been affected by rheumatic fever. It also occurs in people who have congenital abnormalities of the heart valves. Bacteria, carried by the blood stream, infect these areas.

Bacteria sometimes invade the blood stream for a short period after an operation on the mouth, nose, throat, intestines, or female genital tract. This is most apt to happen in operations of the mouth and throat, such as a tooth extraction or the removal of tonsils. Bacteria, including a type of germ called the “green,” or *viridans*, streptococcus live in everyone’s nose and throat. They are harmless to people in good health. But the operation opens a passageway into the tissues, giving the germs an entrance into the blood stream. If these germs reach heart valves that have been damaged, they can cause a dangerous illness. Therefore, people who have had rheumatic fever or who have congenital heart trouble (including congenital narrowing or *coarctation of the aorta*)—no matter how slightly the valves may have been damaged—*must take*

sulfa drugs or penicillin before certain operations or tooth extractions in order to be on the safe side.

CORONARY HEART DISEASE

(Diseases of the Coronary Arteries—the Vital Blood Vessels of the Heart)

Arteriosclerosis, or “hardening,” of the coronary arteries impairs the heart because it affects the arteries which supply blood to the heart muscle. It narrows their diameter, making it difficult for the blood to flow through. It also causes irregularities in the otherwise smooth lining of the arteries. When the flow of blood has been slowed down, and there are tiny grooves in its channel, blood is apt to settle in these places and form clots. (See arteriosclerosis, page 616.)

Arteriosclerosis of the coronary arteries can cause pain over the heart, *angina pectoris*, which is one of the symptoms I described above. These brief attacks of pain are due to the fact that the heart muscle is not getting enough blood. If necessary, the doctor will prescribe medicines such as *nitroglycerine* tablets or *amyl nitrite* vapor to bring relief. He may also ask the patient to cut down on his activities—perhaps to change his job if it is too strenuous. As you can see, it is most important to *know* whether your pains are caused by this disease or by indigestion or a diseased gall-bladder.

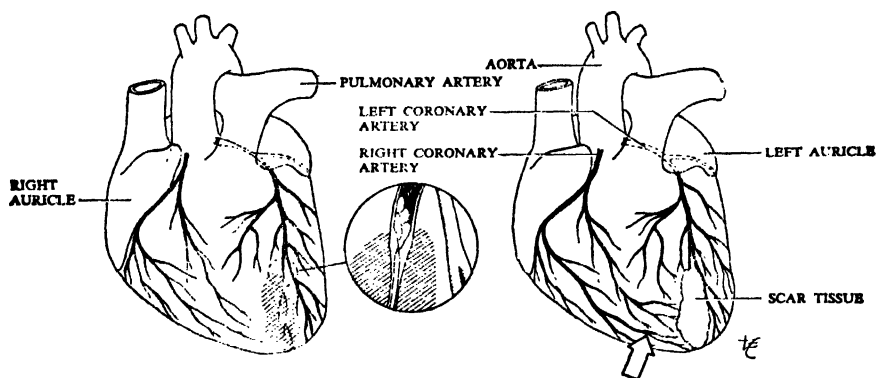


Illustration 33-1. CORONARY THROMBOSIS.

LEFT: At time of attack. The flow of blood through part of the left coronary artery is blocked (shown in inset) cutting off the circulation in the shaded area. **RIGHT:** Recovery from attack. Scar tissue has built up. Blood vessels of the right coronary artery (indicated by arrow) now supply the affected area.

CORONARY OCCLUSION; CORONARY THROMBOSIS

A blood clot may form within a coronary artery and block off the blood supply to part of the heart muscle. This "coronary thrombosis," sometimes called "coronary occlusion," may either injure or destroy part of the heart muscle. Blood clots are the cause of heart attacks characterized by severe and prolonged pain, in contrast with the brief type of pain mentioned before. Since this kind of attack is most dangerous, hospitalization will be required, with at least four weeks of bed rest. Getting back to active work will be a gradual process after such an attack. The cost of such care can be a serious problem, especially if the patient happens to be the head of a household, and loses his salary. In such cases, patients may have to seek financial help, or enter the inexpensive wards of a good hospital or medical center. There should be no stigma or shame attached to such a solution. All but the wealthiest families may be drained of funds before the patient is well again. However, since hospitalization may decide between life and death, it is urgent that patients with coronary attacks get the best medical care, and later have enough time away from work to recuperate adequately.

Why is a hospital important for the victim of a heart attack? Because only at a good hospital can he get all the necessary items of therapy, such as oxygen, expert nursing care, and anti-bloodclotting medicines. Quiet is absolutely essential. Resting at home invites the temptation of having friends in, which may excite the patient emotionally. When the hospital says "no visitors," you can be sure the rule will be enforced.

My advice to any family or patient regarding a severe heart attack is this: remember that you are dealing with a serious situation. Make it easy for your doctor in two ways. (1) Do not demand home care, as some patients or families do. Simply ask the doctor, "What do you advise for the good of the sick person?" And take his suggestion, even if it means having your loved one away from home for several weeks. Treatment of a severe coronary occlusion requires great skill. Only in very exceptional cases can as good care be provided at home as in the hospital. (2) Ask your doctor if he would like to call a heart specialist in consultation. If your doctor has not had special training, he may even ask, with complete justification, to have a heart specialist or internist take over the care of the patient during the first few critical weeks.

When the patient is ready to leave the hospital, the family doctor will usually reassume full responsibility for the long process of rehabilitation.

Should the critically ill patient be moved? The decision about moving a critically sick person with a coronary heart attack should be made only by a doctor. In most instances, transportation to a hospital is safe in an

ambulance, with skilled attendants, or a doctor or nurse to care for the patient en route.

First aid for a coronary heart attack. Have the afflicted person lie down at once. Do not let him walk, move, or make any telephone calls. Have only one person with him who should talk reassuringly to him until medical help can be summoned to give an injection of pain-stopping medicine. Aspirin will not help, and should not be given.

If the patient appears to be in shock, apply first aid for this condition as directed on page 476.

Take all excited and hysterical relatives and friends out of the room, and far enough away so that the sick person cannot sense their excitement.

Remember, too, that in out-of-the-way places, oxygen can be procured for the doctor from garages and other places where oxygen is used for welding. This type of oxygen is pure enough for medical purposes.

What future is there for a person who has recovered from a coronary heart attack? Years ago it was thought that any such attack, if not immediately fatal, would lead to death within a very few years. Now we know this is not true. There are many cases on record of complete recovery after a coronary thrombosis. Usually, some symptoms will remain, but these can be controlled by cooperation on the patient's part in the schedule of activity and medicines prescribed by the doctor. The patient and family should take an optimistic view and always assume that he will be one of those who live out their normal span of years after an attack.

HYPERTENSION

(High Blood Pressure)

As a nation, we have become "high blood pressure conscious." This is not an unmixed blessing, because a certain amount of misinformation has been absorbed along with the valuable information. As a result, many essentially healthy people worry needlessly. That is why I want to start in by saying *high blood pressure is USUALLY a very mild disease*. I deal with it here because it is *not always a mild disease*, by any means. Nobody but a doctor can be certain whether the disease is mild or serious in a given individual. Just "taking the blood pressure" won't tell the story.

As you know, the heart pumps blood into the arteries which distribute it throughout the body. As the blood is forced through the arteries it presses against the walls of these strong, elastic tubes. The pressure is

highest when the blood is being forced ahead by the pump (this is the *systolic* pressure) and the lowest between beats, when the heart relaxes (the *diastolic* pressure). These pressures are measured when the doctor puts the blood pressure cuff around the arm. In typical normal children, the systolic pressure, which is the one people usually have in mind when they think about blood pressure, is from 75 to 100. Young adults range from 100 to 120, and older people from 120 to 140. There is no truth to the old saying that blood pressure should be one's age, plus 100.

These figures are only *averages*. However, when the systolic pressure tends to be higher than the average, and the diastolic pressure above 90 or 100 in adults, the doctor begins to wonder why. He is seldom concerned about low pressure, which usually simply means that the individual happens to vary from the average (see page 701).

Sometimes, because of illness, emotional tension, or for some unknown cause, the walls of the arteries constrict, narrowing the space through which the blood must flow. When this happens, the blood which is pumped through the arteries presses harder against their walls to force its way through. This overly strong pressure is called high blood pressure or hypertension.

In about 90 per cent of all cases, the cause cannot be determined. These are called "essential hypertension," "idiopathic hypertension," "primary hypertension," or "hypertension of unknown cause." The other cases can be traced to definite diseases such as Bright's disease or other kidney ailments, tumors of the adrenal gland, and coarctation of the aorta (a congenital narrowing of the main artery).

Although there are relatively few cases caused by a known disease, it is most important to discover them. For example, cases caused by a tumor of the adrenal gland can be cured by the surgical removal of the tumor. In some instances, coarctation of the aorta can be surgically corrected. It is always essential to do everything possible to cure the condition causing high blood pressure.

Because it is frequently difficult to know whether or not high blood pressure is caused by a curable disease, anyone with hypertension should be examined by a specialist in internal medicine or at the hypertension clinic of a good hospital or medical center.

Repeated examinations over a period of several months may also be necessary before the doctor can decide whether or not high blood pressure is caused by *temporary nervous tension*. Nervousness during a medical examination can cause the blood pressure to rise. Many people have been wrongly diagnosed as having high blood pressure because they were worried about the outcome of the examination. Therefore one measurement alone is not sufficient to indicate hypertension. Repressed anger and

other emotional tensions can cause a marked increase in blood pressure; if they continue, they can be damaging. The fact that symptoms are not always present makes diagnosis difficult.

If the blood pressure stays consistently high, a diagnosis of hypertension is made. The doctor does not judge the severity of the condition solely by the height of the blood pressure. He observes the condition of the small blood vessels in the retina by looking into the patient's eye through an instrument called an ophthalmoscope. The retina is transparent, and is the best place to study the small blood vessels. This examination alone often enables him to determine the severity of the case. However, the heart may be damaged or become enlarged by having to work against the high pressure. Therefore the doctor takes x-rays or electrocardiograms to find out about its condition. Tests on the kidneys provide additional information. On the basis of all these examinations, the physician can decide whether the case is mild, moderate, or severe.

A person with a mild type of case may go along for many years without any symptoms or knowledge of the fact that his blood pressure is high. I recall a patient who was refused insurance at the age of thirty-five when his blood pressure was discovered to be 190 systolic and 110 diastolic. On his fiftieth birthday, his blood pressure was no higher. He had remained well, active, and free of symptoms every day during those fifteen years, and should continue to do so for a long time to come. I have also known a number of women with high blood pressure who continued to thrive in spite of it. We physicians are frequently amazed to find how few symptoms some patients with even severe hypertension experience. But only a doctor can tell whether there are any ill effects that must be treated.

Because high blood pressure places an increased strain on the heart and blood vessels, patients may suffer from symptoms such as headache, weakness, fatigue, or shortness of breath.

Contrary to popular opinion, people who die from high blood pressure are not usually killed by a stroke (shock, apoplexy). Only about 15 per cent of these deaths are due to strokes, while 65 per cent of them are caused by heart disease. It is always important to remember that relatively few people die of their high blood pressure, in comparison with the number that continue to lead useful lives, with little restriction of activities.

TREATMENT

Even in severe cases, considerable relief and a better expectancy of life can be obtained by various new treatments which have been developed in recent years. There are several medicines which the doctor can

prescribe to help reduce the blood pressure, or to relieve its symptoms and prevent complications. *In some cases, it is necessary to restrict the intake of salt. Since obesity apparently increases the tendency to high blood pressure, a reducing diet may be prescribed. It must be followed carefully.* Adjusting the patient's activities to his condition is as important as the medicines which the doctor gives. Strain on the blood vessels and the heart must not be too great. At certain stages of the illness, it may be necessary for the patient to rest at noon, and to slow down in all activities. Faithful and intelligent cooperation on his part is essential, for the treatments usually continue for years.

If the high blood pressure is caused by tensions from emotional factors which are not of a temporary nature, psychiatric help may be necessary (see page 251). Women who suffer from high blood pressure during the menopause frequently improve when their worries are relieved. (For further information about menopausal symptoms and their treatment, see page 766.)

In some cases which do not respond to rest, mental relaxation, diet, and medicines, the doctor may suggest a surgical operation. This operation is successful in a certain number of relatively severe cases. It must be performed by a specialist in surgery of the nerves since it involves cutting the nerves deep in the back, close to the spine.

There is no evidence that the thousand and one advertised cures and remedies for hypertension do any good. Any person with this condition should find a competent M.D. whose judgment he respects and whose personality he likes, and follow his advice.

MALIGNANT HYPERTENSION

In some instances, fortunately infrequent, ordinary forms of high blood pressure develop into the so-called malignant form. When this happens, the destructive action of the high blood pressure on the blood vessels of the body is speeded up. If malignant hypertension is not checked by prompt treatment, it may prove fatal in a matter of months or a few years. The blood vessels in the retina of the eye, in the kidney, the heart, and the brain are hardest hit in the malignant form of the disease. Therefore, blurring of the vision may be an early symptom. Or kidney failure may set in (see page 614 on Uremia). The heart or its coronary arteries may take the first blow. Or the brain may be affected by edema (water-logging) or strokes, leading to headaches, or paralysis.

Let me repeat that (1) malignant hypertension is very uncommon, (2) each year research is leading to better medical and surgical treatments for its relief, (3) like other severe forms of high blood pressure, it is usually treated best by a specialist in internal medicine.

DISEASES OF THE KIDNEYS

Bright's disease and *nephritis* are different names for a group of kidney ailments, comprising the three major types of kidney disease. One of these, *glomerulonephritis*, is commonly called Bright's disease or nephritis, and I shall refer to it by those names. However, two other types also belong to the same "family."

These diseases are serious because the entire kidney is usually affected, and both kidneys are involved. I describe the kidneys on page 123. It is their function to remove, by means of approximately a million filtering units, the waste products of the body. If they cannot function properly because of disease, the waste products accumulate. If they *fail completely*, death results because no other organ can remove the waste products. A person can be perfectly well if he has one healthy kidney, but a disease attacking *both entire* organs is obviously serious.

One of these three types of serious kidney disease is the result of vascular diseases such as *hypertension*, or high blood pressure. (See page 606.)

The other, *pyelitis*, is an infection of the kidneys, usually in the larger portions of the urine-collecting tubes. There may be pain in one or both sides of the lower back, accompanied by fever and a burning sensation on urination. Doctors can readily diagnose this stage of the disease, and treat it successfully with medicines. It is not uncommon during pregnancy (see page 341). However, the disease may develop without anyone's knowing it. It will be revealed by the urine examinations which are part of any good routine medical checkup.

When pyelitis infects the deeper portion of the kidney, it is then called *pyelonephritis*. Most chronic cases are of this latter type.

More and more, I am impressed with the seriousness of pyelitis if it goes into its chronic stage. It may lead, some years later, to slow but complete destruction of the kidneys, with death from *uremia* (page 614). Also, it may be the cause of high blood pressure. The hypertension may then produce all the damage listed under the description of high blood pressure. In fact, pyelitis may eventually lead to a malignant form of high blood pressure.

This is an unnecessary tragedy today because we now have at least three types of medicines which can eradicate kidney infections, or keep them controlled sufficiently so that they will not damage the kidneys. The antibiotics such as Aureomycin and Terramycin are one valuable group of medicines; the sulfonamides are frequently helpful; also the medicines known as mandelic acid and Mandelamine.

In children especially, chronic infections of the kidneys, the ureter or the bladder may result from congenital defects and obstructions which

prevent the normal flow of urine. These may have to be located and corrected by a doctor who specializes in disorders of the bladder and kidney. Such a doctor is called a *urologist*. If necessary, he can pass a cystoscope tube through the opening in the penis or the female urethra. Through this instrument, which has special lights and mirrors, he can see the openings of the ureter into the bladder. Into these openings he passes rubber tubes. Now he can study each kidney separately, and determine its function, the presence of infection or an obstruction. He can even introduce liquids which permit x-rays of the kidneys to be taken (see Illustration 33-2 showing the tubes in place). Such a procedure requires skill and time, and is usually carried out only by highly trained specialists.

Glomerulonephritis, which I shall refer to as nephritis or Bright's disease, is a widespread inflammation of both kidneys. The delicate membranes of the filtering units of the kidneys are affected, and proteins

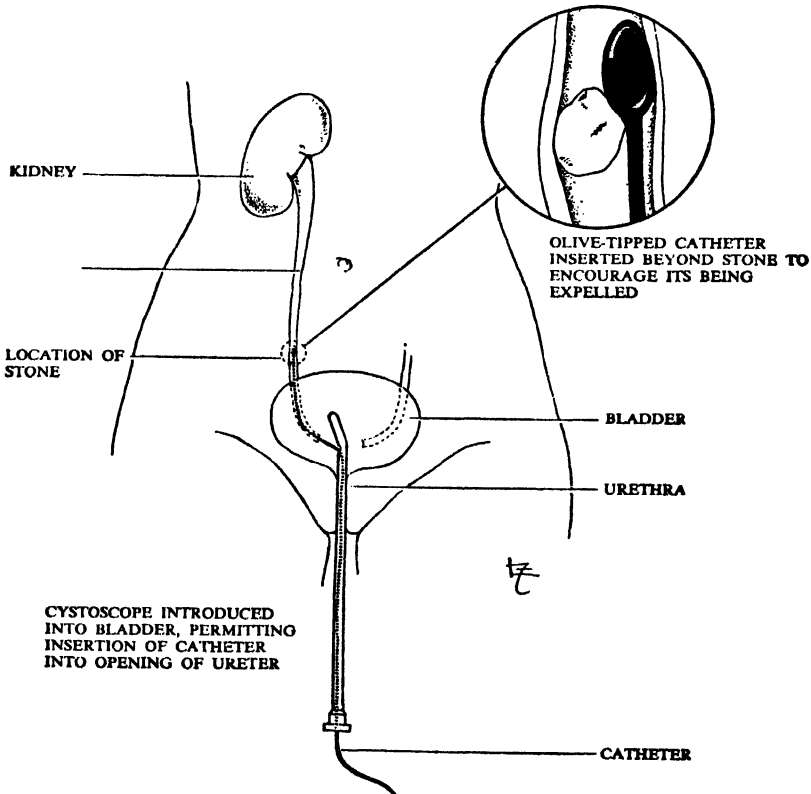


Illustration 33-2. REMOVING A STONE FROM THE URETER BY MEANS OF A CYSTOSCOPE AND CATHETER.

and blood cells pass out into the urine. The presence of the blood proteins, especially albumin, and red blood corpuscles in the urine suggests nephritis, especially if the physician finds certain other microscopic structures called "casts" in the urine. However, *albumin in the urine does not necessarily indicate that nephritis* is present because many other conditions, including several that are mild or harmless, can lead to its appearance.

An acute attack of Bright's disease does more than damage the kidney. It affects the blood capillaries of the entire body so that water leaks out into the tissues. In a typical attack of Bright's disease, the eyes look swollen and puffy, and the ankles as well as other parts of the body may be distended with painless accumulations of "water," or edema fluid. In such an attack, the heart may be affected somewhat but the kidneys suffer the major damage. The inflammation in the kidneys can end in several different ways:

1. Most cases of nephritis heal completely without damage to the kidneys or other parts of the body. The patient is perfectly well the rest of his life.
2. Other patients do not recover completely, but stay in an incompletely healed stage which may eventually heal or may become active again.
3. A certain number continue into a chronic stage. If the inflammation does not stop, the kidneys are eventually damaged beyond repair. Even in these unfortunate cases, there can be many years of comfortable, productive life before the kidneys fail completely.

The physician usually knows within four to six months after the first attack just which way the disease will go. The patient and the family should understand that the doctor may have to see the patient a number of times before he can be certain about the future course. Bright's disease requires frequent, careful medical observations, and special treatments. The patient can be cared for best in a good hospital, especially during the first weeks of the illness.

Nephritis may follow a week or more after the throat, tonsils, or sinuses have been infected with the streptococcus germ. These bacteria sensitize the kidneys in only a very small percentage of persons, in a manner not yet clearly understood, and the nephritis follows. Scarlet fever, a streptococcic infection, causes nephritis in a small number of cases. On the other hand, streptococcic infections of the skin, such as erysipelas, do not cause Bright's disease. Only certain varieties of the streptococcus germ appear to cause nephritis.

A sore throat or scarlet fever, chilling of the body by swimming, or exhausting work, and possibly excessive exposure to sunlight, may set off the damage to the kidneys.

To prevent nephritis the following rules should be followed:

1. Have all sore throats, tonsillitis attacks, sinus infections, and painful glands of the neck treated at once by your doctor. The prompt use of sulfa drugs or penicillin, which kill the streptococcus germs, will prevent many cases of Bright's disease.

2. During the recovery stage from colds, sore throats, and other infections, take precautions for several weeks to prevent chilling of the feet and body. At such times it is better to lose a day's pay than to walk to work in rain, sleet, or snow. Incidentally, these precautions will help ward off pneumonia, too.

3. Because Bright's disease may follow an unnoticed or slight infection of the throat, precautions should *always* be taken against chilling and fatigue. If you become chilled, get warm again as soon as possible.

4. See your doctor when you feel run-down.

Some cases of acute nephritis are so mild that they pass without notice. Years later, the damage to the kidneys may be noticed during a medical examination, or symptoms of chronic nephritis may become apparent. A skillful physician can do much to retard destruction of the kidneys, or relieve the symptoms, but rarely can he stop the fatal outcome of the *severe cases of chronic nephritis*.

This fact should make us all the more determined to carry out preventive measures against this disease and also to make sure that all cases in children and adults are treated early. This means calling the doctor or going to a hospital for advice whenever (1) the urine looks bloody, wine-colored, or smoky in color, (2) the eyes, face, or ankles become swollen, or (3) none of these obvious symptoms appear but you don't feel right when the doctor thought you should be well again after a sore throat, tonsillitis, or similar illness.

There is no point in denying that Bright's disease is a potentially serious illness both in children and adults. It stands high on the list of "public enemies" among the fatal diseases. But the situation is much less serious than usually imagined. Most persons do recover from the acute, first attack. Unfortunately, few can get entirely well from the chronic type.

There is a special form of nephritis which deserves mention: this is *nephrosis*. In children, it may last for years, and eventually clear up completely, provided infections and complications can be avoided during this long period of time. This form of nephritis is characterized by a great accumulation of edema fluid. The patient may be so swollen as to be almost unrecognizable. The tissues under the skin, and the abdominal cavity, may hold quarts of watery fluid. The affected kidneys seem to have lost the ability to regulate the fluid content of the body. However, the kidneys are not usually badly damaged. With modern medicines, it is

possible to ward off the deadly pneumococcus, streptococcus, and other germs which in the past have killed so many children with nephrosis. Therefore, these children frequently can live until nature cures the kidney trouble. After that they can grow up to be perfectly healthy adults.

(See page 591 for the Nephrosis Foundation.)

In adults, nephrosis is a stage of the Bright's disease just described. It tends to become irreversibly chronic more frequently than in children.

Improved methods of treating the edema and other symptoms and signs of nephrosis are available to doctors now.

It should be stressed that the presence of albumin in the urine does not *prove* the presence of Bright's disease. Many persons have albumin in the urine continuously or intermittently without ever suffering from Bright's disease. Nephritis cannot be diagnosed merely by the presence of albumin. Only a careful, complete medical examination by a competent physician or at a good hospital can establish whether the albumin is caused by Bright's disease or some other illness, or is merely the harmless condition called "benign albuminuria."

UREMIA

(Failure of the Kidneys)

Uremia means literally "urine in the blood." It results when the kidneys are so badly damaged that they no longer can purify the blood of urea and other waste products of the body's metabolic activities. In severe uremia, the breath has the ammonia-like odor of urine.

When the kidneys are completely destroyed, the human being cannot live longer than a few weeks. However, by the use of an *artificial kidney* through which the blood is circulated and purified of the waste products, life can be prolonged, but not indefinitely.

When is the artificial kidney used? It is especially important in cases of *temporary uremia* in which the kidneys have stopped functioning for a few weeks. If the patient can be kept alive, the kidneys will resume their normal function. Temporary uremia may occur after blood transfusions of mismatched or infected blood, after certain types of poisoning, in some of the complications of pregnancy, after severe injuries, and from many other causes. Only a certain percentage of cases of temporary uremia require the artificial kidney. Most can be treated successfully without it. But the decision usually requires the judgment of a specialist. Because the artificial kidney requires specially trained doctors and nurses, in addition to very special equipment, the patient may have to be transported to the nearest medical center or university hospital.

Some patients have been flown hundreds of miles and have been saved by the artificial kidney.

Chronic uremia. When the kidneys are hopelessly, irreversibly damaged by advanced disease such as Bright's disease or pyelonephritis, can anything be done to replace the failing kidneys? The artificial kidney is restricted chiefly to the acute, temporary uremias which were described above. However, if a normal human kidney could be placed, by an operation, in an individual whose own kidneys had been destroyed, he could be cured of the uremia. Research doctors are attempting to transplant normal human kidneys. If successful, these experiments will open up a new life for many patients doomed to die of chronic, irreversible uremia.

OTHER DISEASES CAUSING UREMIA

There are many diseases which can damage the kidneys sufficiently to cause uremia. The most common have been mentioned. Others, such as the following, can sometimes be cured or alleviated by medical and surgical treatments, if the condition is diagnosed early enough:

Enlargement of the prostate gland; kidney stones with infection and/or obstruction; overdosage with vitamin D; hyperparathyroidism; severe gout; disseminated lupus erythematosus; periarteritis; polycystic kidneys; diabetes.

This is another reason why every person should have regular medical checkups, because diseases of the kidney frequently come on silently and insidiously (see page 541 on Checkups).

DIABETES

(As a cause of heart disease, vascular diseases, and even uremia)

You may be surprised that I have mentioned diabetes as a major cause of heart disease and have also included it in my list of diseases that can cause destruction of the kidneys, with uremia. You are probably asking, "But doesn't insulin prevent all this?" Unfortunately, insulin is not always the *complete* remedy for diabetes that was hoped for when it was discovered. Insulin saves the lives of countless diabetic patients. However, it does not always prevent the effects of the disease on the blood vessels. In a small percentage of diabetic patients, diabetes affects the blood vessels in much the same way as high blood pressure. It may damage the coronary arteries of the heart or the blood vessels in the retina of the eye, and it may affect the circulation in the kidney. Thus, a diabetic

patient may suffer from heart trouble because the coronary arteries are not working properly. If the kidneys are badly affected, the patient may seem to be suffering from advanced Bright's disease. This combination of diabetes and nephritis is called Kimmelstiel-Wilson disease, and it may end in uremia.

Diabetic patients should always be under the constant supervision of a doctor. He can help prevent the serious, destructive aspects of the disease. Let me repeat that diabetes is usually a mild disease, and does not lead to these serious complications. But there is no denying the fact that it *can* be a serious disabler and killer. That is why doctor and public health experts would like to have entire communities "screened" for diabetes regularly so that the disease can be detected early. This is another instance of the value of the periodic medical checkup.

See Chapter 5, page 87, for the complete description of diabetes, which starts as a disease of the endocrine glands in the pancreas.

HARDENING OF THE ARTERIES

(Arteriosclerosis)

In the preceding pages on heart diseases, we discussed high blood pressure, nephritis, diabetes, and hardening of the coronary arteries. This group of diseases accounts for a majority of the deaths from heart disease. They are also responsible for a considerable proportion of deaths from apoplexy, more commonly known as strokes or shocks. Hypertension and arteriosclerosis cause many of the deaths due to kidney disease.

Doctors do not fully understand the complicated relationship between high blood pressure and hardening of the arteries. The two diseases can exist separately, but they often go together. The greatest damage occurs in the latter case. We have indicated how hypertension injures the heart by making it work against pressure, and how arteriosclerosis causes a narrowing of the coronary arteries which supply blood to the heart muscle. A heart muscle which is already handicapped by an inadequate supply of blood would be especially endangered if called upon to do the extra work needed when the blood pressure is high.

A great deal of scientific research is being dedicated to the cause and cure of this disease. Although at the moment doctors are not certain of the exact measures to be taken in the prevention of this disease, they are confident of the outcome of research.

One clue which is being tracked down is related to the presence of cholesterol in the arteries. Cholesterol is a fatty substance found in every tissue of the body. Normally there are large deposits of cholesterol in the brain, in the outer part of the adrenal cortex, and in the corpus luteum

which develops in the ovary when the egg becomes fertilized. *Unusual amounts of fatty deposits in the lining of the arteries are the first changes seen in arteriosclerosis.* Whether or not eliminating high-cholesterol foods such as milk, dairy products, and eggs, will lessen the amount that accumulates in the arteries is not yet certain. Studies on diet in relation to cholesterol accumulation in the body are going on today and we may know the answer in the near future.

One thing is certain: eating fatty foods will make most people overweight. Obesity is a definite menace to your good health. The added poundage you have to lug around puts an extra strain on the heart, making it work that much harder to pump blood through the fat. It is a well-known fact that the thin person has a longer life expectancy than the obese person. All doctors will agree that after the age of thirty-five it is better to be slightly underweight than overweight. Thanks to the dictates of fashion, the doctor can usually persuade a woman to reduce. But too many men, especially as they advance toward middle age, get careless in their eating habits and begin to develop a paunch. Since men in general have a shorter life expectancy than women, and more coronary-artery disease, the fat man is deliberately encouraging his own demise. Every male, especially if he is over thirty-five, should make an all-out effort to stay thin. In Chapter 3 we have suggested several diets. At this point, I would like to repeat my warning that any person who decides to go on a strenuous reducing diet should consult his doctor first, because there are individual diets for individual needs, depending on age, state of health, height, and the size of the body frame.

STROKES

Doctors may refer to a stroke as a *cerebro-vascular accident*. Strokes are due to a blockage or hemorrhage in a brain artery. They are caused, chiefly, by arteriosclerosis and hypertension. The best way to prevent strokes is to prevent these diseases.

An artery of the brain may be blocked by a blood clot, or thrombus, usually at a point that has been damaged by arteriosclerosis. The blood vessel may be occluded by a clot that has traveled from the heart. This type of blockage is found in some forms of rheumatic heart disease, or after a coronary occlusion. Hemorrhage from a brain vessel occurs most often when an artery has been damaged by both arteriosclerosis and hypertension.

It is important to remember that a *normal* artery can stand much higher pressures than ever occur in even the most severe forms of hypertension. The artery must be damaged in some way before it will rupture from high blood pressure.

Strokes may come on suddenly. Frequently, the effects are gradual over a period of hours or days. The person becomes confused, forgetting what he has said, losing track of his thoughts in the middle of a sentence. He may become dizzy and often falls down or stumbles. He may become clumsy, dropping or bumping into things. He may not be able to speak at all. His mouth may be drawn to one side. The last step is complete unconsciousness.

The victim of a stroke should always be put to bed immediately, and the doctor should be called.

Are strokes always fatal? No. And many severe strokes clear up completely without any residual paralysis or symptoms.

When the stroke occurs, there is damage to that area of the brain which is nourished by the artery causing the apoplexy. If a large area is damaged, death may occur shortly after the onset of the stroke. This is particularly true when there is a large hemorrhage. But even in some cases of hemorrhage, the clot can be removed by a brain surgeon.

In strokes caused by clots and emboli, the outlook is better. Emboli are detached portions of clots or bacterial fragments from a diseased valve. Doctors often marvel at patients who are completely paralyzed by a stroke—and who recover completely. When I was an intern, a ninety-year-old man was brought in, completely unconscious and paralyzed from a stroke. He lived to leave the hospital, talking and joking. That incident caused me to be optimistic in even the most serious cases.

Remember, too, that the great bacteriologist and chemist, Louis Pasteur, recovered from a stroke and lived for years afterwards, during which he made some of his greatest discoveries.

Some strokes leave residual paralysis of an arm, a leg, or both. Sometimes, the area in the brain that controls speech may be affected.

In the past, little was done to rehabilitate patients with strokes. Now, experts in medical rehabilitation perform wonders with these apparently hopelessly disabled patients. The paralyzed muscles must be treated early, and joints moved, so that when the brain recovers function, the joints and muscles will not be too stiff and weakened to respond. The patient must be encouraged to learn to walk and to feed himself. If his writing hand is paralyzed, he should be taught to write with his other hand.

Institutes of rehabilitation are available in the large medical centers. However, most doctors and nurses have had training in this art and science, and can help the patient. If it is impossible to have a nurse or physiotherapist, some member of the family should learn the techniques of massage and exercise. If possible, he should go to the nearest medical center and learn the techniques there. Remember that time is important. Do not delay.

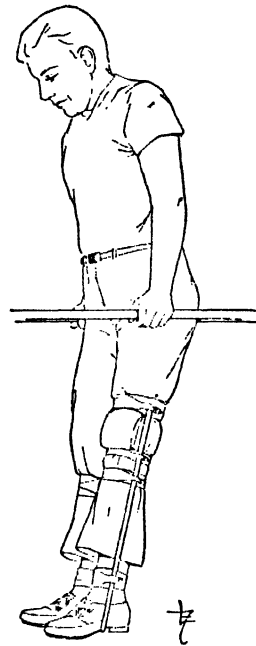
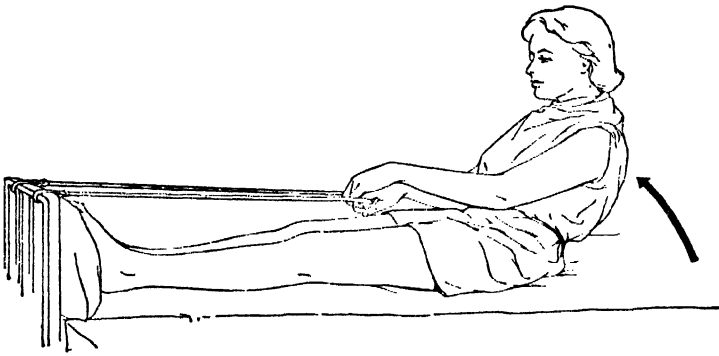


Illustration 33-3. HOME METHODS FOR REHABILITATION FOLLOWING A STROKE.

UPPER: Bedridden patient exercising arms, back, and legs. The stronger hand is placed over the weakened one. **LOWER LEFT:** Wheel-chair patient using stronger arm to help exercise weakened one. **LOWER RIGHT:** Arms having been strengthened, patient helps support himself on rails or chair backs; leg braces (one short and one long) give additional support for walking.

CURABLE FORMS OF HEART DISEASE

Most of the severe forms of heart disease cannot be cured in the sense that the ailment is completely eliminated. For example, in rheumatic heart disease, coronary artery disease, and high blood pressure, all that medical and surgical treatment can do is to slow down the progress of the disease, thus limiting the damage. However, there are some types of heart diseases which are *completely* curable. It is important that these be diagnosed in the early stages before they do irreparable damage. Think how wonderful it is when a patient, completely disabled by heart disease of this type, is given a new life. Some of these conditions are the following:

Coarctation of the aorta.

Constrictive pericarditis. In this disease, hard, even stony, adhesions form around the heart. These can be removed by surgery.

Heart failure caused by thyroid disease.

Some forms of congenital heart disease.

Let me suggest that every person suffering from heart disease in which the cause is not crystal clear, should ask his doctor about the possibility of a consultation with a heart specialist or a heart clinic. (See page 591 for the American Heart Association.)

CANCER

There is no reason to run away from the idea of cancer. Face it squarely. You will see that it is actually far less terrible than most people imagine.

Cancer can be treated successfully. In many instances it can be completely cured. Countless people who have been treated for cancer have lived long, healthy lives, with no sign or symptom of the disease. Examinations made throughout their lifetime and after their deaths revealed no trace of it. *Cancer is definitely curable.* I repeat and underline this *fact* because it is so important for you to believe it.

The very word cancer is horrible to most people. The fear of this disease casts a shadow on lives which cancer itself will never touch. Those on whom it does lay a hand often become so terror-stricken they are unable to fight back. I know a lovely woman, previously well-balanced, who was emotionally paralyzed by the appearance of a lump in her breast. She did absolutely nothing about it until her friends could actually notice the change in her bosom—and by that time it was too late.

WHY ARE PEOPLE SO AFRAID OF CANCER?

The reasons vary, but they usually include some, or all, of the following:

1. Despite the progress that has been made in regard to this disease, old attitudes persist. In the *past*, there was little if anything that could be done about it. Ninety years ago, Dr. Oliver Wendell Holmes discovered that the noted author, Nathaniel Hawthorne, had cancer. The way Dr. Holmes thought of it was: "the shark's tooth is upon him." In those days, to have a cancer was like falling prey to a shark.

2. Even today, cancer is the second greatest killer among diseases.

3. It can attack people of all ages—men, women, and children. It can affect almost any part of the body. Therefore no one, at any time, feels completely safe.

4. It seldom issues clear and obvious warnings. There is no simple test that can definitely rule out all possibility of cancer, nothing, for example, to compare with the blood test for syphilis or urinalysis for diabetes.

5. The cause of cancer is not known, and we tend to feel helpless when facing a mysterious adversary.

These are, indeed, reasons for regarding cancer as a serious enemy. But they are not reasons for becoming panicky. Quite the contrary. Even though the enemy has not been wiped out, medical science is winning many battles. The Killer has not been caught and destroyed, but he is being cornered. In such a situation people must be alert. They cannot rely for their protection entirely on the authorities, that is, on the doctors, but must cooperate with them. Panic is not compatible with intelligent cooperation!

In my opinion, too much emphasis has been given to cancer as an enigma. It is true that we do not know all about it. But we know a great deal. We know enough to win countless victories. Our knowledge provides us with weapons to win even more victories, if everyone uses this knowledge.

CANCER EXPLAINED

The tissues of our bodies grow by the division of cells. A cell is the earliest and simplest form of life. It is a single unit, like a building block. One cell divides to make two cells. These two new cells divide to make four, and so on. New cells are smaller, but otherwise exactly like the parent cells. They grow until they reach their normal size.

When the body reaches maturity, it stops growing and settles down to the size it will maintain for the rest of its existence. A certain number of new cells keep forming—for example, to repair damage. When you cut

yourself, the wound heals by the formation of new tissue. When a certain point is reached in this process, nature normally cries, "Halt!"

It is still a mystery why cells divide until they have made just enough new tissue to replace the injured parts, and then stop.

We also do not understand why cells sometimes go on multiplying until there is too much tissue. That is what a tumor is—a lump or mass produced by the unchecked growth of cells in some part of the body.

Tumors are either *benign* or *malignant*. A benign tumor may be large or small. It may stop growing when it is no more than an inoffensive little lump with a thin membrane around it. It may become so large that it causes trouble because it occupies too much space. *But it does not spread* as a malignant tumor does. An example of a benign tumor is the *lipoma*—a fatty tumor or soft lump of the skin which you may have seen. Another example is the fibroid tumor of the uterus.

A *cancer* is a *malignant* tumor—a shapeless mass which *keeps on growing in a disorderly fashion*. Some cancers grow rapidly, some slowly. But they do not stop, nor do they remain confined to a small area. This is what makes them dangerous, and is the reason why we cannot afford delay in the treatment or removal of a cancer.

If not checked, cancers grow until the enlarging tissue crowds and presses on other organs of the body. The cancer prevents the organs from doing their proper work, and also robs the healthy cells of their food and blood supply. Some cancers spread like wildfire, destroying the organs around them. Pieces of cancer tissue may break off and, carried by the blood or the lymph, start growing in a new and perhaps distant part of the body. An untreated cancer in its late stages can be compared with a fire which has started in the basement and sends a spark up the stairway to the attic to set off another fire there.

I want to insert a note of warning here: Only a doctor can tell whether a tumor is malignant or benign. Usually, he has to examine a bit of the growth under a microscope in order to know whether or not it is a cancer. Never decide for yourself "It's only a harmless growth." Once a cancer begins to spread, the chances of a cure diminish rapidly.

DIFFERENT TYPES OF CANCER

Most cancers occur in people who are over forty, but cancer can appear at any age. It even afflicts children. There are many varieties of cancer, some of which are common while others are quite rare.

Cancers are divided into two large groups: *sarcomas* and *carcinomas*. Sarcomas usually affect the bones and muscles, and are apt to grow rapidly and be very destructive. The carcinomas make up the great majority of the cancers of the breast, stomach, womb, skin, and tongue.

Fortunately, most cancers grow, at first, only in the site where they originated. Even then, the cancer may invade the neighboring cells and tissues, and perhaps destroy valuable structures. However, it becomes far more dangerous when it spreads, or sets up new growths, in other parts of the body. The new cancer is called a *metastasis* or *metastatic lesion*. A cancer can spread from the kidney to the bones, or from the lungs to the brain, apparently by way of the blood stream.

When cancer enters this stage, it becomes very difficult to cure. Yet, in some instances, it can still be held in check. For example, widespread metastases from a cancer of the prostate gland have been cleared up and kept under control for many years by surgery and hormones.

Obviously, the time when cancer can best be cured is in the *early period* of its growth, before it destroys neighboring tissues or spreads to other parts of the body.

Precancers. These, in themselves, are harmless changes in the tissues of the body. Their danger lies in the fact that they have a *tendency to become cancerous*. They include: *leukoplakia* of the mouth and tongue, thickened white patches—not ordinary canker sores; some *moles*; any *chronically irritated spot* on the skin or the mucous membranes of the mouth and tongue; *polyps*, such as those of the large intestine which, although harmless, can become cancerous; some forms of lymph-gland tumors such as the slowly growing follicular type of *lymphoma*.

It is most important to know about precancers, so that they can be removed or destroyed in time to prevent the possible development of a potentially serious cancer.

Hodgkin's disease. We are not certain whether or not this disease is cancer. It usually afflicts young people, causing a progressive enlargement of the lymphatic glands (see page 413) throughout the body. In most cases, it starts in lymph glands located in the neck, the groin, the armpit, or even internally in the chest or abdomen. Because it can become widespread, invasive, and destructive like a cancer, and because it responds to treatments in the same way that cancers do, it is commonly classed as a type of tumor-cancer.

Leukemias. In this disease, the number of white blood corpuscles increases tremendously—nature again failing to call "Halt!" They respond

to cancer treatments such as x-ray and radium. Therefore, doctors agree that the leukemias should be grouped with other cancer diseases at the present time.

CANCER IS NOT CONTAGIOUS OR COMMUNICABLE

Fortunately, cancer is not contagious. No cancer has ever been transmitted from one patient to another. In the laboratory, scientists have succeeded in transmitting *animal* tumors and cancers. However, doctors, pathologists, nurses, and others who handle human cancer daily have never "caught" the disease. It is therefore perfectly safe to visit, associate with, or care for anyone who is sick, or even dying, from cancer.

WARNING SIGNALS OF CANCER

Cancers cause different symptoms according to their location, state of development, and so on. In a moment, I shall tell you more about cancers in specific parts of the body. Be sure to read the sections that apply especially to you: for example, cancer of the prostate gland if you are a man, and cancer of the breast and of the uterus if you are a woman.

Here I shall list the main warnings which cancer gives. I have written about them before (see page 556) but they are important enough to be repeated. *Everyone should be familiar with all of them.* It can mean a great deal to you—or to your dear ones who may not know these signals.

The Early Danger Signs of Cancer

1. Any lump or thickening, especially in the breast, lip, or tongue.
2. Any irregular or unexplained bleeding. Blood in the urine or bowel movements. Blood or bloody discharge from the nipple or any body opening. Unexplained vaginal bleeding or discharge, or any bleeding after the menopause.
3. A sore that does not heal, particularly around the mouth, tongue, or lips, or anywhere on the skin.
4. Noticeable changes in the color or size of a wart, mole, or birthmark.
5. Loss of appetite or continual indigestion.
6. Persistent hoarseness, cough, or difficulty in swallowing.
7. Persistent change in normal elimination (bowel habits).

Special Note:
Pain Is Not Usually an Early Sign of Cancer

None of the above signs *necessarily* means cancer. The *only* way to discover whether or not they mean cancer is by a complete examination. Go at once to your doctor, to a cancer detection clinic, or the clinic of a reputable hospital.

**SIGNS AND SYMPTOMS OF CANCERS IN
VARIOUS PARTS OF THE BODY**

STOMACH CANCER

(This is a common type of cancer, especially in men.)

1. Continued lack of appetite.
2. Continued indigestion not due to faulty habits of diet.
3. Pain after eating.
4. Loss of weight.

CANCER OF THE RECTUM

1. Periods of constipation which mark a change from usual bowel habits, sometimes followed by episodes of more frequent elimination, or diarrhea.
2. Cramps in the abdomen and a sensation of incomplete elimination, or a feeling that there is a lump in the rectum.
3. Rectal pain, and rectal bleeding, e.g., blood spots on the toilet tissue or in the bowel movements.
4. Cancer of the rectum is often confused with hemorrhoids, or piles, and therefore may not be recognized in the early stage. A thorough physical examination by a doctor should determine whether the condition is piles or cancer. Sometimes piles appear suddenly, due to a cancer higher up in the rectum. Do not neglect hemorrhoids (see page 755).

CANCER OF THE UTERUS

(This is the most common cause of death from cancer in women.)

1. Increased or irregular vaginal discharges.
2. Return of vaginal bleeding after the menopause.

CANCER OF THE BREAST

(Cancer of the breast is the second most common cancer in women.)

1. Painless lumps in the breast.
2. Bleeding or discharge from the nipple.

Cancer of the breast is most frequently found in women over the age of forty. Only one woman in a hundred develops cancer. And these cases can be cured if detected early. Women can train themselves to find early, curable tumors by self-examination of their breasts. It is not necessary to perform the following steps more than once a month.

a. Immediately after the menstruation period has ended, when the breasts are normally soft, look into a mirror and raise both arms over your head so that the sides of the breasts are visible. Study your breasts carefully, noting whether one breast looks higher than the other or whether one breast seems larger than it was the previous month. Also check on any slight depressions or dimpling of the skin over the breast.

b. Using the right hand on the left breast and vice versa, push the breast back gently against your chest and feel for any small lumps.

c. Feel the armpits for any swelling.

The best time to make this examination is in the morning. If you decide that something may be wrong, you have all day to reach your doctor, if only to get his reassurance. *Not every lump* in the breast means cancer. Many are harmless formations due to glandular functioning. Let your doctor decide.

Remember the motto: do not be alarmed, but be on the alert. Between the monthly checkups, *do not think about tumors, cysts, and cancer*. If you can't do this, and there are women who can't dismiss it from their minds, read page 818 for my advice.

SKIN CANCER

(This is the easiest type to detect and cure.)

1. Sores and ulcers which do not heal.
2. Moles, warts, blemishes, scars, or birthmarks that suddenly change in color, size, or texture.
3. Growths constantly exposed to irritations, as, for example, from brassieres, or from shaving.

For your own protection, don't use razor blade surgery or other home treatment on moles and warts.

LUNG CANCER

This form of cancer has been on the increase in recent decades. Some medical authorities attribute this to increased smoking. Lung cancer is

prevalent among heavy smokers, who use more than a package of cigarettes a day, but it can also strike nonsmokers. As in every other indulgence, it is wise not to go to extremes. Chain smoking of cigarettes, pipes, or cigars is a medically risky habit, as well as expensive. (See my comments on the Calculated Risk in Health, page 817).

1. A cough which does not let up after two weeks, or a change in an old "cigarette cough." Wheezing or other noises in the chest.
2. Coughing up blood or bloody sputum. Any sputum which looks rusty, pink, or blood-streaked.
3. Shortness of breath without a good cause like running or climbing steps.
4. Chest ache or pain.

Many of the symptoms of cancer of the lung are like those of tuberculosis. Unfortunately, the early curable stages of both sicknesses do not produce any symptoms. For double protection, get an immediate and thorough examination, including an x-ray, to protect yourself against the development of either cancer or tuberculosis. And then have an x-ray of your lungs taken each year. Not even a lung specialist can detect the *earliest* stages of tuberculosis or cancer by means of the stethoscope alone.

CANCER OF THE MOUTH, TONGUE, AND LIPS

This is found more often in people who neglect their teeth, have ill-fitting dentures, or have not paid attention to persistent sores or other abnormalities in the mouth. Tongue cancer may be encouraged by prolonged smoking of a pipe or cigar which is held in the same position in the mouth, for example, in the man who always lets his pipe hang from one side of his mouth so that the smoke hits the same spot on the tongue. Watch for:

1. Any sore which does not heal.
2. Any white patch replacing the normal pink color of the tongue or the inside of the mouth.

Avoid irritation of the tongue or inner cheek surface by prompt repair of jagged teeth or poorly fitted dental plates.

KIDNEY, BLADDER AND PROSTATE CANCERS

Some of the following signs more often mean prostate enlargement (see page 711), which is not cancer, than actual cancer of this gland:

1. Blood in the urine, or reddish or pink urine.
2. Difficulty in starting urination.

3. Increasing frequency of arising at night to pass urine.
4. Burning sensation during urination.

BRAIN TUMORS AND CANCERS

Benign and malignant growths can affect the brain. Even a benign tumor of the brain may become serious because, as it grows, it cannot expand readily. The bony skullcase confines it. The pressure exerted by the tumor on the brain can damage or destroy parts of this vital organ. Brain tumors may cause:

1. Headaches
2. Disturbances of vision
3. Dizziness
4. Nausea and vomiting
5. Paralysis

HOW CANCER IS DETECTED

I have mentioned some of the ways a cancer indicates its existence, pointing out that a thorough examination by a doctor is necessary to determine the real significance of these signs.

THE MEDICAL EXAMINATION

A checkup for cancer requires a *thorough* examination. This must include the skin, the breasts, the genital organs, and the internal organs of the chest and abdomen. A vaginal examination is essential for women, and a rectal examination for both sexes. As I point out on page 546, no woman should gamble with her health, and perhaps her life, because of false modesty. Tell your doctor you desire a *complete* physical checkup.

Everyone should have routine examinations periodically, the frequency depending on one's age and other considerations (see page 542). After forty, a yearly checkup is advisable. When there is a danger signal, or any doubt concerning a possible danger signal, be sure to have an immediate examination.

ADDITIONAL TESTS FOR CANCER

Do not be alarmed if your doctor suggests tests in addition to the routine examination. He may simply feel, as you do, that it is wise to take all precautions.

X-rays. A routine chest x-ray can be taken in conjunction with a physical checkup, or it can be performed independently. In many cities, free chest x-rays are made available. It is advisable to have one made every year, since early lung cancers, as well as tuberculosis and some diseases of the heart, can sometimes be detected in this way.

The free x-rays are usually small snapshots or microfilms. Your doctor may want to make a full-sized film of your chest. He may also want to take x-rays of other parts of the body.

For examination of the stomach and intestines, the x-ray involves special techniques which may seem fairly complicated, including the use of barium sulfate which is either swallowed or inserted through the rectum. When barium, in the form of a milky drink or enema, is in the stomach or large intestine, the organ is revealed as a silhouette on the x-ray film. In some instances, even this does not give the desired information, and still further examinations are needed.

Special examinations. Your doctor has available highly specialized instruments that are extremely valuable in studying the internal organs and locating small cancers in their early, curable stages. These instruments work on the principle of a periscope. A slender, usually flexible, tube is inserted into the region to be studied. A tiny bulb at the end lights up the area of the body which is being examined. Looking through the other end, the doctor can see this either directly or by a system of lenses or mirrors. Some of these methods, which I list below, require the services of a specialist.

Bronchoscopy: for the bronchi, the tubes leading to the lungs.

Esophagoscopy: for the esophagus, the tube which leads from the throat to the stomach.

Proctoscopy: for the rectum.

Gastrosocopy: for the stomach.

Cystoscopy: for the bladder.

Laryngoscopy: for the larynx, or voice box.

BIOPSY

This is *the* definite way of determining whether or not even a tiny growth is cancerous, or precancerous. A bit of tissue is removed and examined under the microscope. This examination is made by a *pathologist*, a doctor who specializes in determining from the appearance of the tissue whether it is normal or shows signs of a tumor or other disease.

The material for examination is obtained in different ways depending

on the tissue or organ involved. It may be a very simple procedure which can be done in the doctor's office, or it may require an operation. Biopsies of some tumors are taken through the endoscopic examining instruments I listed above. Thus, a growth in the rectum is biopsied through the proctoscope, and those in the lungs are often biopsied through the bronchoscope.

Sometimes it is not possible to perform a biopsy until the time of actual operation on a tumor, especially if it is located internally or deep in the breast. In such a case, a small piece of tissue is removed during the operation and given to the waiting pathologist, who freezes it immediately, examines it under the microscope, and gives the report to the surgeon. This procedure is called the "frozen section technique". The findings of the pathologist enable the surgeon to know how to proceed with the operation. If the tissue is not cancerous or precancerous, he may remove very little—in certain circumstances, nothing at all. If it is cancerous, he will remove a far larger amount of tissue. Even though a doctor may be fairly certain in advance that a growth is benign or that it is malignant (cancerous), the biopsy provides practically 100 per cent proof.

A biopsy is a valuable method of diagnosing diseases other than cancer, including some mild but troublesome ailments such as a chronic skin condition. Do not be frightened if your doctor suggests a biopsy. Let him make the decision.

THE PAPANICOLAOU SMEAR TEST

This simple test is used in detecting cancers of the lung, of the stomach, and, particularly, of the cervix, the mouth of the womb. A bit of fluid obtained from these parts of the body is put on a glass slide and placed under the microscope. Many cancers have been detected in this way when they were still so small that they caused no symptoms, did no damage, and were completely curable.

BLOOD TEST

It would be wonderful if we could take a sample of blood and, by studying it, determine whether or not a cancer was present in any part of the body. Medical science has not yet advanced this far. The blood is tested chemically for cancer of the prostate and for a rare malignancy of the bone marrow called *multiple myeloma*. A blood smear and blood count help in the diagnosis of *leukemias*, but this is not a chemical test. As yet there is no general blood test which will indicate whether or not

a cancer of any type is growing somewhere in the body. Reports of such tests raise our hopes, but so far none of them has proved to be completely accurate. Perhaps a dependable blood test will be developed. Do not depend on such a test, or any other "new test for cancer" you may hear about, without first checking with your doctor.

THE TREATMENT OF CANCER

The aim of cancer treatment is the *complete* removal or destruction of all cancerous tissue. Once this has been accomplished, the cancer is gone just as surely as a fire that has been extinguished. In many cases, this can be done before the cancer has caused any damage.

SURGERY

The principle of cancer surgery is the total *removal* of *all* of the cancer. The surgeon cuts away some of the normal tissue as well, so that he can be certain of getting all the cancer cells. If a cancer is large or internally situated, this is a major surgical procedure. It must always be undertaken by a qualified specialist in a good hospital. (See page 533 on how to locate a qualified specialist in surgery. He will operate only in an accredited hospital.)

X-RAY AND RADIUM

The principle of x-ray and radium treatments for cancer is total *destruction* of *all* the cancer. Both x-ray and radium give off penetrating radiation which damages tissue, especially tissue that is growing. Since cancer tissue grows rapidly, it is destroyed more rapidly than the normal body tissue. Some types of malignant growths are affected more quickly than others by radium and x-ray.

Both these treatments must be administered by specialists. *Excess* radiation can be very harmful since it will destroy normal as well as cancerous tissue. Your family doctor may be able to recommend a competent *roentgenologist* (radiologist). Or follow the suggestions on page 533 which describe how to locate a specialist. If you cannot afford his services, be sure to follow the suggestions on page 584 regarding clinics, medical centers, and so on. This is no time for half-way measures or false pride!

Surgery, x-ray, and radium may be used singly or in conjunction with one another.

MEDICINES AND CHEMICALS

There is no medicine, chemical, or drug which, taken by mouth, injection, or inhalation will "cure cancer."

However, certain substances are effective in the treatment of certain cancers. Some chemical compounds *retard* the growth of cancer. *Nitrogen mustard* has been useful in combating leukemias, the malignancies of the blood-forming organs, and related diseases such as lymphosarcoma and Hodgkin's disease. The chemical is injected into the veins.

Certain cancers respond to treatment with *hormones*, such as stilbestrol, a female hormone, which is given for cancer of the prostate, and certain of the male hormones which are used in treating cancer of the breast.

Radioactive isotopes have been helpful in treating certain cancers, notably *radioactive iodine* for cancer of the thyroid, which is quite rare. The isotope is taken by mouth in water. *Radioactive phosphorus* is being used in some diseases of the blood-forming organs, especially in *polycythemia vera*, also called *erythremia*, a rare disease in which too many red blood cells are produced.

CONQUERING CANCER

Think of cancer as a powerful enemy. Think of yourself as equally powerful, possessing great allies in your doctor, the discoveries of medical science, and your own intelligence.

Cancer may never come near you. But do not count on that. Take steps to outwit, avoid, and fight cancer as you would any other danger that was lurking about.

1. The most important step is the regular physical checkup. Half of all cancers occur in parts of the body which the doctor can readily examine. The American Cancer Society estimates that 70,000 people in this country are saved every year by *early* treatment of cancer. Unfortunately, it also estimates that *another 70,000 could be saved*—but are not.

2. Avoid irritations and repeated injuries to your tissues that may pave the way for cancer. For example:

- a. Irritations of the tongue and inner cheek surfaces by jagged teeth or dental plates that do not fit properly.
- b. A black or hairy mole that is constantly being rubbed by clothing.
- c. Tears or scars of the womb, following childbirth, that have not been repaired.

d. Dry or scaly patches on the neck or face that are constantly scraped raw by shaving.

e. Exposure to cancer-causing substances such as coal tars, lubricating oils, paraffin, and arsenic. Always take proper precautions if you work with or handle these substances.

3. Keep your skin, mouth, and teeth clean. Visit your dentist, as well as your doctor, regularly.

4. If you are a woman, examine your breasts once a month by the method I described on page 626.

5. Don't discuss your symptoms with people outside the medical profession, and don't accept or give any advice except "SEE YOUR DOCTOR." There is not time to "try the medicine that absolutely cured Mrs. Smith whose condition was just like yours." And there is no need for the worry that well-meaning people often cause. Let your doctor or a cancer clinic decide about your symptoms.

6. Beware of "sure cures" for cancer. They are promised by quacks, either deliberate fakers or self-deceived crackpots. Some innocent people advocate a "cancer cure" because they believe it actually worked on them. The fact is that they did not have cancer in the first place. No matter what the "cure" consists of—ointments, salves, herbs, lotions, medicines, mysterious "rays," or vapors—it is a fraud and a menace to your health. It will not only take the money you need for proper treatment, but cause you to lose valuable, often critical, time which you should be spending under a doctor's care. Some "cures" actually cause a cancer to grow more rapidly. Only a reputable doctor or clinic can make use of surgery, x-ray, radium, and other reliable methods of curing or treating cancer.

I discuss quacks, chiropractors, Christian Science, etc. more fully on page 532.

The American Cancer Society, Inc., 521 West 57th Street, New York 19, N.Y. and the National Cancer Institute of the National Institute of Health, USPHS, Bethesda 14, Md., will send you free literature containing information about institutions providing scientifically sound treatment for cancer.

7. Learn the danger signals on page 624. I repeat this once again because it is so important. If you have, or suspect you have, any of them, go to a reputable physician or clinic *at once*. Time is cancer's greatest ally.

Great strides are being made in conquering cancer. Never before in the history of medicine has so much money, effort, and intelligence been mobilized to combat this powerful foe. We are still far from our ultimate

goal of finding the cause and cure of every type of cancer. But the death rate for many types of cancer has been greatly reduced in the last ten years. Thousands of lives have been saved and are being saved every year from death due to this Killer.

But medical science alone cannot conquer cancer. You must play your part calmly, alertly, and intelligently in order that *you* will be victorious in the fight against cancer.

ACCIDENTS

Accidents have become a leading cause of death and disability. They occur mainly in the home, on the streets and highways, and on the job.

I have discussed accidents and their prevention in the home and on the job on pages 456 and 187. Now I want to say something about accidents on the highways in order to help eliminate this frightful menace.

Being a parent, I share the terrible anxiety of most parents regarding highway accidents to children. As a physician, I see what the average person—perhaps unfortunately—does not see: the mangled bodies which arrive at the hospital after the accidents. For every death, there are usually several people who are injured. Some of them are permanently crippled or disfigured, or they never recover full use of their brains.

Highway accidents kill many *young people* who are just on the threshold of life. The death and disability rate among teen-agers in automobile accidents is horrifying.

What can parents and doctors do about the deaths from highway accidents? First, we must *set an example* for our children by being safe drivers ourselves. This means following the rules for good driving set down by the National Safety Council and other experts in accident prevention. And we must stick to these rules at all times. How can we expect teen-age children who are just beginning to handle cars to become safe drivers when they hear their parents, or parents' friends, *boasting* of the high speed of the new car, or the way they "got away" with a bit of recklessness on the road, or, worst of all, how they made it home from a party, after too many drinks.

PREVENTION OF ACCIDENTS

1. *The equipment factor.* Automobile accidents can be reduced by keeping your car in the best possible shape. That means having good brakes, chains for icy highways, good windshield wipers, nonglaring lights. Right and left turn indicators are helpful. An extra rear-view

mirror should be installed on the driver's side. I use blowout-proof tires, and feel much happier about driving, having once had a tire fail on a mountain road. And, equally important, is the periodic checkup of the car's equipment. Find the equipment defects before they cause trouble.

2. *The personal factor.* The personal equation, the human factor, is a big one in accidents. Most of us love high speed. We even like danger. But when high speed leads to death and disability, it just doesn't pay. Highway accidents would be greatly reduced if everyone observed the legal speed limits. It is amazing how much more you enjoy driving when you decide in advance that you will reach your destination at safe rates of speed. You even remember the scenery. You can enjoy talking to whomever accompanies you. And you keep out of hospital accident wards!

Young people who are "speed crazy" and who won't change their habits after discussions with parents, should be required to discuss this with the family doctor. He will tell them what lies ahead from accidents. Also, he will try to explain and channel the tensions of youth that are behind the need for "daredevil" driving. The worst offenders should consult a psychiatrist before they kill not only themselves but a carload of their teen-age classmates.

People should not drive who have been drinking whiskey, wine, or beer. Is there a safe amount? That depends entirely on the individual. It is best to let the nondrinker in the group do the driving, or to take a taxi. (Alcoholic beverages are discussed on page 14.)

3. *The health factor.* Every driver should have good vision, good hearing, and be in good health. If there is any question about this, let your doctor help you overcome the physical defect before you have an accident. There are amazingly few diseases which are an absolute bar to driving. Usually, it depends on the severity of the illness. Everyone with a definitely diagnosed chronic illness that affects the nerves, brain, heart, muscles, etc. should discuss hazards in driving with his doctor.

WHAT TO DO WHEN AN ACCIDENT OCCURS ON THE HIGHWAY

I have covered most of what needs to be done in the first-aid chapter, in the section on fractures and under such titles as shock, hemorrhage, etc.

Always stop severe bleeding first. Then treat shock. Set up roadblocks, flashlights, or flares to prevent the injured (and yourself) from being hit by other cars.

Remember that emergency ambulances take the injured to the nearest hospital or doctor. Its facilities may not be adequate for serious injuries. Have your own doctor notified at once, even if you are many miles

away. Your doctor may want to send a brain surgeon or an orthopedic specialist to help the local doctor in the event of severe concussions or a broken back or neck.

If you decide on local medical care for severe injuries, it is best to rely on the hospital superintendent. Ask him to call the Chief of the Surgical Service. This physician will either take over, or after surveying the situation will assign a competent brain, orthopedic, or reconstructive surgeon as the findings demand. In some severe injuries from highway accidents, several surgeons will be required for the different types of injuries.

A last word: the most careful automobile driver I have met is a busy plastic and reconstructive surgeon who specializes in automobile accident cases!

THE LUNGS

Not so very long ago, a doctor felt pretty helpless when his patients were stricken with tuberculosis or pneumonia. All he could do can be summed up in the words "good care, and prayer." It is quite different today: we now have weapons that enable us to defeat these lung diseases. Yet victory is by no means complete, as you can see from the chart on page 598. These Killers are still powerful.

Everyone knows that we must have lungs in order to breathe the air we need to sustain life itself. I have described the lungs and the essential work they do on page 110. Fortunately, like the kidneys, they have a tremendous reserve capacity. It is possible to live comfortably even if one lung has been completely destroyed or removed. But we must have a definite amount of healthy lung tissue in order to breathe adequately. If too much of it becomes infected or destroyed, we eventually succumb because of lack of oxygen. In severe infections of the lungs, such as pneumonia and tuberculosis, the patient faces an additional danger from the toxins, or poisons, of the germs causing these diseases.

The lungs can also be destroyed in other ways. For example, silica and asbestos, if inhaled for a long time, turn the delicate, porous lungs into tough fibrous masses. Air cannot get through the fibrous lungs, and the patient faces suffocation. Industrial workers should guard against the dangers of silica and other irritants (see my chapter on *Your Job and Your Health*, especially page 191).

In old people, the lungs sometimes lose their elastic, porous quality. This condition, which is called *emphysema*, may become serious if not treated early and regularly.

Some other less common, but potentially serious lung diseases, in-

clude: lung *abscesses*, *bronchiectasis*, a chronic infection of the air tubes, *sarcoidosis*, *cystic disease*, and *fungus* infections such as *coccidioidomycosis* (San Joaquin Valley fever), *actinomycosis*, and *blastomycosis*. I have described cancer of the lung on page 626.

Fortunately, almost every Killer disease of the lungs can be prevented, cured, or alleviated—IF the advice given in this book is followed, and the doctor is given a chance to treat the disease in its early stages.

TUBERCULOSIS

The *tubercle bacillus*, the germ causing tuberculosis, usually attacks the lungs, although it sometimes invades other parts of the body such as the kidneys, lymph nodes, skin, larynx, bones, joints, intestines, and certain portions of the male and female sexual organs. It only rarely attacks the heart, liver, or brain.

Tuberculosis germs work slowly as compared with many other disease germs. That gives us valuable time to fight the disease before it does any permanent damage. But while it takes a long time for tuberculosis to develop, it may take even longer to cure it.

HOW TUBERCULOSIS IS CONTRACTED

A certain number of cases of tuberculosis are caused by *unpasteurized* milk and other dairy products which may contain tuberculosis germs. Tuberculosis of the lungs, however, is caused by germs which are transferred to healthy people from the lungs of a sick person in sputum which he coughs up. Tuberculosis germs can live for months in dried sputum. They may be spread in a number of ways: through the air by a cough or sneeze, by kissing, or on eating utensils. Sputum on the sidewalk may be tracked in on rugs where children play. Some patients discharge these germs in the stool, passing them on to others if they are careless in their toilet habits. *But the chief method of spread is by coughing.*

Patients with known cases of tuberculosis are taught to protect others by covering every cough or sneeze with a handkerchief or cleansing tissue. However, there are believed to be 500,000 to 1,000,000 people in this country who have been infected with tuberculosis and do not know it. Some of them have reached the stage where they can infect others. Most people, particularly city dwellers, will be exposed to these germs sooner or later. Fortunately, this does not mean that they will all contract tuberculosis.

When tuberculosis germs reach the lungs and begin to multiply there,

the body rushes its defenses to the infected area. The body is almost always victorious in this *first* skirmish. It kills some of the germs and covers the remainder with tough scar tissue. Although the imprisoned germs stay alive, they are rendered powerless. This first infection usually causes no symptoms. However, it is important to know about it in order to take precautions to keep the germs from escaping from their prison.

A simple skin test enables the doctor to find out whether or not tubercle bacilli have ever entered the body. If this *tuberculin test* is positive, the doctor will then proceed to discover whether the germs are safely imprisoned or whether they are active and causing disease. The *only sure way* of doing this is by an x-ray photograph.

Today, having chest x-rays taken is far simpler and easier than posing for ordinary photographs. They are available at little or no cost, through hospital clinics, factories, or mobile community x-ray units. Through the countless numbers of these x-ray pictures that have been made, it has been clearly shown that many people who have had an infection do not develop *active* tuberculosis. This indicates nature's capacity to fight tuberculosis germs. But these x-ray pictures perform the far more valuable service of detecting active tuberculosis in its very early stages, before it has done any real damage and can most easily be cured.

RESISTANCE TO TUBERCULOSIS

The outcome of the body's battles against tuberculosis germs—its ability to kill or imprison them and keep them imprisoned—depends on two main factors. One is the condition of the body. Poor health due to fatigue from late hours or overwork, especially in a cold, damp place, crowded living conditions, poor nutrition, or other illness, can lower the body's defenses so that the tuberculosis germs will gain a foothold. The second is exposure to tuberculosis germs so frequently or in such great numbers that even a healthy person is overwhelmed by them. For example, one might fail to take proper precautions when living with a tuberculous person. This often happens in the case of a husband or wife who does not know his or her spouse has active tuberculosis, and even more often in the case of a child who is exposed to a tuberculous parent, relative, nursemaid, or teacher. A combination of both these conditions is almost certain to result in tuberculosis. Children are particularly susceptible to this disease.

SYMPTOMS OF TUBERCULOSIS

A child or very young person with active tuberculosis will usually suffer from one or more of the following: loss of pep, poor appetite, loss

of weight, and fever. Even though these symptoms may be caused by something other than tuberculosis, they must be regarded as warning signals. The tuberculin test is very helpful in diagnosis where young children are concerned.

In older people, listlessness and vague pains in the chest may go unnoticed as they are often not severe enough to attract attention. Unfortunately, the symptoms which most people associate with tuberculosis—cough, sputum raising, fever, loss of weight, and hemorrhage from the lungs—do not appear when the disease is still in its early, most easily curable stage. Often these symptoms do not occur until a year or more after the germs have started their attack. In aged people, the symptoms are apt to be very mild (see page 795). In its early stages, the disease can usually be detected *only* by an x-ray of the lungs.

If *all* adults were x-rayed every year, almost all cases of tuberculosis would be discovered early. At this time, the disease is usually confined to a small area, and, with proper treatment, can be checked in a few months. Advanced cases often take years to heal, and some fail to respond to treatment. If all individuals with active tuberculosis were treated properly, they would not infect the healthy, and tuberculosis would soon be a rare disease indeed. This goal is surely worth striving for!

THE TREATMENT AND CURE OF TUBERCULOSIS

Because the human body has remarkable powers to resist tuberculosis and to heal the infection once it appears, almost everyone with *early* tuberculosis will get well if he observes the following plan of treatment.

If the doctor advises it, the patient should go to a sanatorium as soon as the diagnosis is made. Here he will acquire physical and mental relaxation, and receive the good diet and the skilled medical care that are the keystones of proper treatment. He will be trained in new ways of living that build up his strength and enable him to keep well. Tuberculosis sanatoriums are planned and conducted for one purpose—to help the patients get well.

Home care is usually only second best. No matter how hard they try, individuals without special training can seldom provide proper medical and nursing care, or prevent the patient from being disturbed by noise, irregular hours, visitors, and emotional upsets due to worry about infecting others in the family or upsetting the household.

Because it is so often a temptation to partially recovered patients, I want to urge very strongly: no patient should leave his sanatorium until the doctors are sure he is ready to go home.

Years ago, everyone placed great faith in climate as a cure for tuberculosis. Today, understanding the infectious nature of tuberculosis, we have proved that there is no magic in any particular area of the country. Each state and many large cities have excellent sanatoriums in healthful locations. Travel and expense and loneliness are no longer necessary, because, in most cases, a public or private sanatorium can be found within range of the patient's family and friends.

Treatment of tuberculosis by medicines. In recent years new medicines have been developed for the treatment of tuberculosis. Some of these are *streptomycin*, *PAS* (para-aminosalicylate), and *isoniazid*. Sometimes these medicines are given in combination. They are very helpful in many cases of tuberculosis, *but*, so far, none has proved to be the "magic bullet." They can give rise to dangerous side effects, such as permanent deafness or dizziness from the use of streptomycin. Usually, treatment with these medicines should be carried out by a physician who specializes in tuberculosis.

Surgical treatment of tuberculosis. The sanatorium rest cure is frequently augmented by certain surgical procedures.

Pneumothorax. Air is injected into the space around the affected lung by means of a needle. This collapses the lung, and aids healing by putting the infected area at rest. When the air is reabsorbed in a few weeks, more is introduced.

Crushing the phrenic nerve. The phrenic nerve helps move the diaphragm by carrying the electrical impulse to it from the brain. If one phrenic nerve is crushed or severed, the diaphragm will not move on that side. The lung on that side will not move because the diaphragm controls breathing (see Illustration, page 641). Therefore, tuberculosis specialists sometimes crush the phrenic nerve in the neck region in order to rest a tuberculous lung.

Thoracoplasty. In cases in which pneumothorax or phrenic nerve crushing cannot be used, the lung can be collapsed by cutting out pieces of a number of ribs. The chest wall "caves in" and holds the affected lung firmly, like a splint, thereby resting the infected portion.

Pneumectomy. If the tuberculosis is restricted to one area of the lung, and if other methods have failed, part of the lung—or even an entire lung—is sometimes removed surgically. Major surgery of the lungs is performed much more frequently now because the new medi-

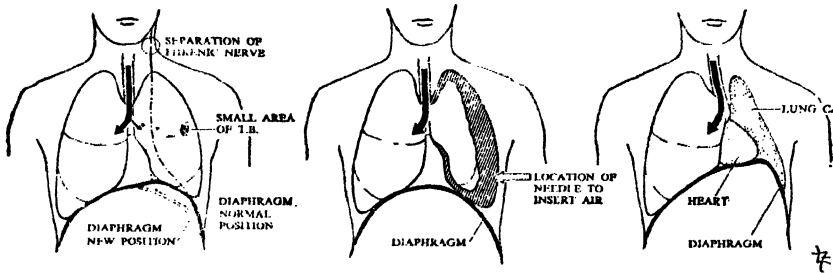


Illustration 33-4. SURGICAL TREATMENTS FOR PULMONARY TUBERCULOSIS.

LEFT: The phrenic nerve is separated, immobilizing one side of the diaphragm. This helps keep the lung at rest while scar tissue forms. **CENTER:** Artificial pneumothorax. Air is periodically introduced into the lung cavity to collapse one lung and thus completely immobilize it temporarily. **RIGHT:** Complete removal of lung. Tissue in process of filling the gap.

cines can control infections which might otherwise result from cutting into the diseased lung.

Some patients with types of advanced tuberculosis which were previously considered hopeless have been restored to health by the new surgical techniques. Every tuberculous patient who may have given up hope because of severe disease should have his case reviewed by a specialist.

Treatment of other types of tuberculosis. Tuberculosis of the lymph glands, the kidneys, genitals, etc. is usually treated in much the same way as lung tuberculosis. Whether rest, medicines, or surgery—or a combination—should be employed will generally require a consultation between the family doctor and a specialist in tuberculosis.

HOW TO PREVENT TUBERCULOSIS

Tuberculosis is one of the most easily avoided of all the Killers. The best precautions are (1) keeping in good condition, (2) avoiding unnecessary exposure to tuberculosis germs, and (3) detecting tuberculosis in its earliest stages. A burning match may go out by itself, but it *may also cause a fire*. Why not put it out when it can easily be extinguished?

Here are some rules to follow:

1. Have a medical checkup every year (see page 541). Be sure it includes a tuberculin test or an x-ray picture of the chest. The stethoscope alone cannot detect *early tuberculosis*.

2. Go to a doctor or hospital clinic for an x-ray and examination if

you have a cough, cold, or bronchitis that does not clear up in two or three weeks, if you are tired and listless, lose weight, have pains in your chest, "night sweats," a fever, or cough up blood or bloodstreaked sputum.

3. Keep your resistance to tuberculosis high by regular and sufficient sleep, meals, and relaxation. Be sure your diet is properly balanced, your work not too exhausting, and your home and place of work comfortably warm and free from dampness. (See Chapters 1, 2, 8 and 22.)

4. Use pasteurized milk only. The tuberculosis germs in cattle may be transmitted through unpasteurized milk, causing tuberculosis of the bones, joints, and lymph nodes—especially in children. See page 179 for directions on home pasteurization of milk if you cannot buy it in your community.

5. Everyone in your household, including a boarder or servant, should have a chest x-ray taken every year.

6. Keep a good distance from people, inside your home and outside, who cough, especially if they do not cover their mouths with a handkerchief or tissue. Make "covering a cough" a habit in your family.

7. Wash your hands before meals or after you have touched articles which are apt to be contaminated—for example, a subway strap.

8. A checkup for tuberculosis should always precede marriage.

9. If you have a family history of tuberculosis, tell your doctor, and be especially careful about following these rules. Although tuberculosis is not inherited, it does tend to appear more frequently in some families than in others.

10. If someone with whom you or any member of your household is in contact develops tuberculosis, be sure to have a checkup and x-ray immediately, and again in six months. Don't get panicky about this. Being exposed certainly does not mean that you have been infected. But do not ignore the possibility of danger. Why wait until you smell smoke before you discover whether or not the match is burning?

Since the beginning of this century, tuberculosis has dropped from Number One to Number Seven in the list of Killers. This has not happened by accident! Our knowledge of this disease should make it possible to remove it from the list entirely, to force this enemy into unconditional surrender. With your help, and that of others, tuberculosis can be rendered powerless.

PNEUMONIA

Pneumonia is an infection of the lungs. When attacked by this disease, the normally spongy tissues of the lungs become solidified. The doctor,

tapping the chest of a patient with pneumonia, will hear a "solid" instead of a "hollow" sound. However, a chest x-ray is necessary to confirm the diagnosis.

Pneumonia can be caused by: (1) The *pneumococcus* or certain other bacteria, or (2) *viruses*. Both types of pneumonia are infectious and can spread from person to person. Most people carry the pneumococcus and other pneumonia-causing germs in their throats at all times, but when they are well and strong, the germs do no harm. When the body is weakened, resistance to the pneumonia germs is lowered, and the body cannot successfully fight against them. The time to be most on guard is just after an ordinary cold begins, especially the third and fourth day, and during and after an attack of influenza, whooping cough, or measles. Overexposure to cold after a great deal of sweating, and insufficient rest, also create conditions favorable for an attack of pneumonia.

If the disease affects one or more lobes of the lung, it is called *lobar pneumonia*. When both lungs are affected, the lay person usually calls it "double pneumonia." The doctor terms it *bilateral*. *Bronchopneumonia* refers to pneumonia that is localized chiefly in or around the bronchial tubes. It is usually, but not necessarily, milder than lobar pneumonia.

FIRST SIGNS OF PNEUMONIA

The symptoms are easily recognized except in aged people (see page 795). They are: a cough, sharp chest pains, bloodstreaked sputum, and a high fever which generally starts with a shaking chill. Anyone with these danger signals should get into bed immediately and remain there. The doctor should be called promptly. This is an emergency disease. Every moment counts in curing it. If treatment is started at once, the chances for recovery are excellent.

PNEUMONIA CAUSED BY BACTERIA

Most people who speak of pneumonia refer to this type. If the germs happen to be the pneumococcus variety, the chest pain, cough, bloody sputum, and fever usually start suddenly. With some other bacteria, the symptoms appear more gradually. This form of pneumonia occurs most frequently in the late winter and early spring.

Bacterial pneumonia was one of the leading Killers a generation ago. Today, thanks to medicines such as penicillin and other antibiotics, and the sulfa compounds, the danger to the patient's life has been practically eliminated—*provided that treatment is started in time*. The new

drugs, miraculous as they are, can do little good if this Killer disease has made too much headway.

VIRUS PNEUMONIA (PRIMARY ATYPICAL PNEUMONIA)

This form of pneumonia is called atypical because it was previously far less common than the bacterial variety. However, now that pneumonias due to bacteria have been greatly reduced, the virus type is more prevalent. It is rarely fatal except in patients with heart disease and other complicating illnesses. Antibiotics are also employed in the treatment of virus pneumonia.

A special, rare form of virus pneumonia is called "parrot fever," because it is transmitted by parrots.

CARE OF THE PATIENT

Hospitalization is desirable in most cases of severe pneumonia because x-rays and other special tests are required, as well as special medicines and equipment. Home care should not be undertaken without the doctor's permission and supervision. He will tell you how to take the necessary precautions. For example, the patient's eating utensils and linen must be scalded and washed with soap and water before being used again, and all nasal discharges and sputum must be carefully collected and promptly burned or otherwise disposed of. A doctor should always be called in to treat a patient suffering from pneumonia.

Treatment of pneumonia in isolated areas. If you live in an isolated area, or are planning any kind of trip which will take you to places where a doctor cannot be reached, ask your physician for a supply of antibiotics to take with you in case pneumonia strikes (see page 217 on Antibiotic First Aid).

PREVENTION

Because the new medicines have rapidly cured so many cases of pneumonia, some people are beginning to forget that it is still a potentially serious disease. Don't make that mistake. It is well worth your while to guard against pneumonia.

The best prevention is good general health. Get plenty of rest and nourishing meals. Avoid overexposure and take immediate care of a cold. Avoid contact with others who have colds. Most of us carry around

many germs which do not harm us because our bodies have built up a resistance to them. But we may be powerless before an invasion of "foreign" germs from another individual.

DISEASES OF THE LIVER AND GALLBLADDER

In the chapter on everyday care of the parts of the body, I told you some important things about the liver and gallbladder. If you turn to page 122 and review them, it will help you to a better understanding of the diseases of these organs.

There is only one *liver* in our bodies. It is an absolutely indispensable organ. Complete removal or destruction is followed by death in a very short time. Fortunately for all of us, nature has given us a tremendous amount of reserve liver tissue. It has been estimated that more than 80% of the liver cells can be damaged or destroyed before symptoms of liver insufficiency will appear. Another very fortunate fact about the liver is its great capacity for regeneration and rebuilding itself after disease has injured the cells, or even destroyed large numbers of them.

As with the kidneys and lungs, if too much of the liver is destroyed by disease, a condition of insufficiency sets in. If this is not corrected early enough, disability and eventual death will occur.

The *gallbladder*, on the other hand, can be removed completely without harm to the body. It appears to be a quite unnecessary organ. You might ask, "If the gallbladder is subject to infection, stones, cancer, and so on, why not remove this unnecessary 'storage tank' early in life before the harmful diseases set in?" Unfortunately, as you can see from the illustration on page 649, the gallbladder is located in an area where surgery is difficult. Removal of the gallbladder is a major operation, not a minor one.

When the gallbladder is removed, the *bile* flows directly into the intestines. Even though the gallbladder may not be essential, the *bile* is needed to help in the digestion of food. Furthermore, the liver removes some of the waste products from the blood stream and disposes of them in the bile. These waste products are then eliminated in the feces. The brown color of bowel movements is due to bile. If the liver becomes diseased, the bile may not be disposed of properly. It may then pile up in the blood stream, causing the eyes and skin to become yellow. This yellowing is termed *jaundice*. It is most easily observed in the eyes. However, it may come on so gradually that it is not immediately noticed by those who are in daily contact with the jaundiced person.

Jaundice is often an indication of a disease of the liver, although it can be due to other things. For example, if the tube leading from the liver and the gallbladder to the intestine is blocked by a stone loosened from the gallbladder, the bile will accumulate and get into the blood stream, causing jaundice. Certain diseases of the blood, such as *hemolytic anemia*, increase the amount of the yellow pigment of the bile. This, too, will cause jaundice.

A particular type of liver disease that also causes jaundice is the result of a virus infection of the liver. This disease, now called *infectious hepatitis* or *virus hepatitis*, attacks young people chiefly. It has been quite common in the armed forces. Usually the patient recovers completely in a few weeks. But when proper medical care is not available—as, for example, when soldiers cannot be evacuated from the front to base hospitals—the disease may result in serious liver injury and even in *cirrhosis*. This type of liver disease is extremely infectious, as I explain on page 123.

Because jaundice can be caused in many ways, and because each condition requires different treatment, it is extremely important to see a doctor at the first sign of jaundice. He will determine its cause and prescribe proper treatment. Although it may not mean anything serious, jaundice must always be regarded as a danger signal.

OTHER IMPORTANT DANGER SIGNALS

Another symptom of liver disease may be a gradual, unexplained enlargement of the abdomen, with or without swelling of the ankles. Vomiting blood, or passing bloody or black, tarlike stools, are also symptoms of liver disease or other potentially serious disorders requiring immediate medical attention. Some symptoms of liver disease are not readily identified as such because they are often indications of other diseases. These include: fatigue, loss of weight, nausea and poor appetite, anemia, and hemorrhoids. They, too, are warnings that should send you to the doctor for an examination.

Unfortunately, many people disregard jaundice and other symptoms that may indicate a liver disease. This is particularly sad, for although modern medicine can sometimes cure advanced cases of liver disease, the greatest progress has been made in curing it in its early stages.

CAUSES OF LIVER DISEASES

Ailments of this important organ can develop from a number of causes, including virus infections, nutritional deficiencies (sometimes connected with alcoholism), diseases of the gallbladder, and injuries

such as those due to exposure to chemicals, especially in certain industrial jobs.

Puncture wounds, such as those caused by stabbing, or a fall on a pointed object, must be operated upon immediately. Occasionally, the liver may be injured by a blunt impact, such as a flying tackle in football. Anyone having an abdominal pain after an injury of this kind should see a doctor at once.

Cirrhosis is a scarring of the liver. Its symptoms are the same as those of other liver diseases which I have just described.

Most people think of alcoholism when they hear about cirrhosis. It is true that chronic alcoholics are more apt to suffer from cirrhosis than are teetotalers. However, the exact relationship between alcohol and the common type of cirrhosis is not fully understood. Studies indicate that the alcoholic neglects to eat nutritious foods because he obtains sufficient calories from alcohol to keep him going, and thus develops a dietary deficiency. This is one of the dangerous consequences of alcoholism which I discuss on page 693. But cirrhosis of the liver is by no means limited to alcoholics or people with nutritional deficiency. There are several kinds of cirrhosis due to different causes.

TREATMENT OF LIVER DISEASES

Even after liver disease has been diagnosed, some people feel well enough to disregard the doctor's advice in regard to treatment, which often includes hospitalization. This is unfortunate because the disease requires immediate care. Otherwise, it may advance to an incurable stage.

The treatment usually includes a period of bed rest and a nutritious diet high in proteins, vitamins, and carbohydrates and, frequently, a restriction of salt. The patient is hospitalized so that he can be under the doctor's watchful eye in case other methods of treatment are needed.

Sometimes advanced cases of liver insufficiency can be helped by certain types of surgical operations. These may provide relief for the troublesome accumulation of fluid in the abdomen, which is called *ascites*. An operation may reduce the possibility of a hemorrhage from the engorged veins, the *varices*, in the esophagus and stomach. A damaged and scarred liver causes the blood to back up into certain veins, which may rupture and cause a serious, and even fatal, hemorrhage.

Many patent medicines, sold by quacks, claim to "flush out" or "stimulate" the liver. These claims are nonsense. There are no known medicines which can increase the function of the normal liver. Nor is there any need for such a medicine. The so-called "liverish feeling" some people complain of is not connected with the liver at all. Under ordinary

circumstances, if you are getting a well-balanced diet, are not an alcoholic, and have no disease of the gallbladder, you should have no worry about your liver.

DISEASES OF THE GALLBLADDER

You may wonder why I include gallbladder diseases among the Killers when you may have known people who have suffered from them and considered them little more than a nuisance. I do so because I feel people are inclined to minimize these diseases, particularly women who are very apt to have mild gallbladder disturbances. They tend to take a casual attitude toward what *can be a Killer*, but need not be if taken seriously.

Acute inflammation of the gallbladder (acute cholecystitis). When the gallbladder is acutely inflamed, the symptoms are generally extremely severe. There is acute pain and tenderness in the right upper part of the abdomen in the region of the gallbladder, accompanied by fever, nausea, and prostration. Such a condition requires immediate attention, preferably in a hospital, because if the inflammation does not subside quickly, the gallbladder must be removed before it becomes gangrenous and ruptures. This complication is apt to be fatal. If the operation is performed early by a skilled surgeon, the chances of complete recovery are excellent. The operation for removal of the gallbladder is called *cholecystectomy*. Sometimes the patient is so sick, or the gallbladder area so inflamed, that the surgeon cannot operate to remove the organ. He then does a less demanding operation in which a drain is placed in the gallbladder. This procedure has the medical name of *cholecystostomy*.

Gallstones. We do not understand why stones form in the gallbladder. They are definitely associated with obesity and pregnancy. Women are more apt to be troubled by gallstones than are men. Gallstones may be present for years without ever causing trouble. All too frequently, patients are operated upon for gallstones when the problem is actually in the nearby stomach, duodenum, pancreas, liver, or kidney. That is why a serious operation such as the removal of gallstones should be undertaken only after your doctor has had plenty of time to study the situation. Also, he may very justifiably suggest a consultation with an internist or surgeon who specializes in diseases of the gallbladder.

Gallstones do cause real mischief, though much less than is usually attributed to them. The stones can move from the gallbladder along the tube leading into the intestines (the *common bile duct*, see Illustration 33-5). On its way, the stone may cause severe pain. This has a severe

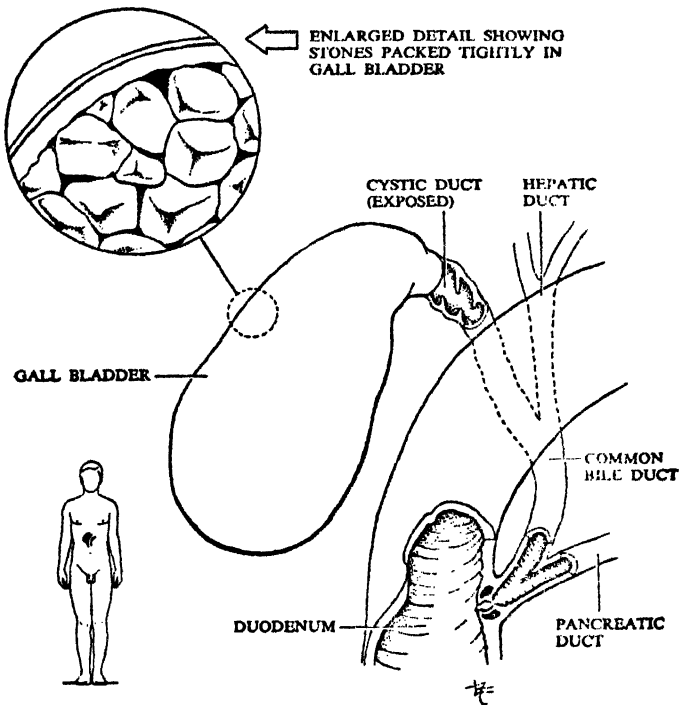


Illustration 33-5. THE GALLBLADDER.

cramping, colicky quality which is one of the worst pains known. Such an attack of *gallbladder colic* may subside, or the stone may lodge in the main bile duct, causing obstruction of bile flow, and jaundice. This will require surgical removal. It is a very serious operation, especially if delayed to the point of extreme jaundice and impaired liver function. It should be performed only by a very experienced and skilled surgeon.

Usually, gallstones cause difficulty of a more chronic nature. They lead to symptoms of vague discomfort and pain in the upper abdomen. There may be dyspepsia, nausea, and an intolerance to fatty foods. Slight jaundice may be present. The existence of gallstones can be discovered by x-ray and other tests. If there is persistent trouble from stones, it is best to have them removed before one becomes lodged in the common bile duct. The operation, when performed under ideal conditions, is 99 per cent safe. Sometimes, too, it is desirable to remove certain types of stones because they might lead to *cancer of the gallbladder*. When removing the stones, most surgeons remove the entire gallbladder so that no stones can form later on. Gallstones are given the medical name *cholelithiasis*. Usually, some chronic infection or in-

flammation of the gallbladder accompanies the gallstones. This is named *chronic cholecystitis*. Sometimes, there is chronic inflammation of the gallbladder without any stones. The symptoms and treatment are much the same as for chronic gallstones.

OTHER POTENTIALLY SERIOUS DISEASES OF THE LIVER AND GALLBLADDER

In addition to the diseases just described, there are others which can impair or destroy the liver. Infections such as abscesses may form in or around the liver. These may be caused by bacteria such as the staphylococcus or the colon bacillus. Also, the organism that causes *amebic dysentery* has a special predilection for the liver. Many patients with this type of dysentery develop liver abscess, which, fortunately, can be successfully treated. But it is best to get at the disease early enough so that it will not spread to the liver. Shepherders in some foreign countries are frequently infected with a parasitic worm from their dogs. This condition may lead to a large *echinococcus* cyst of the liver which can be treated by surgery.

Cancer may arise as a primary neoplasm in the liver, or it may develop there as a secondary metastasis from a cancer of the stomach or some other part of the body. The gallbladder is subject to primary cancer. Syphilis may affect the liver.

SYPHILIS

One of the happiest days of my medical career was the one on which a letter arrived from the editor of a leading medical journal dealing with syphilis. He wrote that syphilis is now being treated so easily and efficiently that there is scarcely enough research on this disease to warrant continued publication of a journal devoted especially to it. I hope I shall live to see the day when similar letters are written by editors of journals on cancer, heart disease, and all the other illnesses which lead to so much suffering and tragic end results!

Penicillin and other medicines have revolutionized the treatment of this serious disease. However, this does *not* mean it is no longer a Killer. But it is tremendously reassuring to know that syphilis can be readily and *completely* cured. There is no longer any truth to the old saying "once a syphilitic, always a syphilitic." Fear and shame have been the greatest allies of this potentially terrible disease. Today, this fear is absolutely groundless. Nor is there any need for shame. From the doctor's viewpoint, syphilis is a preventable and curable disease, not a

moral punishment for sin. Understanding this fact will prevent people from sneaking off to quacks and "doctors for men" who make a specialty of *fake* cures, because they are ashamed to face a reliable physician.

Syphilis is the correct medical name for this disease which is also called "the pox," "siff," "lues," "bad blood," and "haircut." In the main, it is transmitted through sexual contact. Infection can also occur through kissing. In extremely rare instances, it has been contracted by drinking from a water glass previously used by a syphilitic person. It is never caught from contact with toilet seats.

The spiral-shaped germ of syphilis is called *Spirochaeta pallida*, or *Treponema pallidum*. It is quite different from the germ causing gonorrhea, which is an entirely separate venereal disease (described on page 715). Both gonorrhea and syphilis may, however, be contracted at the same time.

PRIMARY SYPHILIS

After the syphilis germs have entered the body, there is no sign of infection for a period which averages about three weeks, although it may range from ten days to three months. The first sign is a sore, or *chancre*, which usually appears on the spot where the germs have entered the body. A chancre can resemble a pimple, blister, or open sore. It is generally firm or hard, and accompanied by little or no pain. It is most frequently located on the sex organs, but may be on the lips or fingers. In men the sore is generally on the penis, although it may be on the skin nearby, including the thighs. Two or three chancres may be present simultaneously. In women, a chancre is sometimes concealed in the inner sex parts where it may not be seen or felt.

It is foolhardy to make guesses about sores on the sex organs. Even competent physicians often cannot tell whether or not a sore is a syphilitic chancre until they conduct special tests. By examining material from the sore under the microscope, they can see whether the germs of syphilis are present. *Any* sore on the sex organs should be examined and tested by a physician immediately. If it is not syphilis, a great deal of needless worry will be avoided. If it is syphilis, treatment can be started at once with assurance of a *prompt cure*.

Not all people infected with syphilis develop chancres.

The Wasserman and other blood tests for syphilis will usually fail to detect the disease at this early stage.

The chancre heals of its own accord without treatment, and is usually gone before the blood test is "positive"—that is, indicates the existence of syphilis. For this reason, people have been lulled into a false sense of security or have dropped treatment before they were cured.

SECONDARY SYPHILIS

The second stage of the disease occurs about nine weeks after infection. A rash may appear, often covering the entire skin, including the palms of the hands and the soles of the feet. The rashes of secondary syphilis may resemble anything from measles to *psoriasis* (see page 750), so that even experienced doctors cannot be sure without a Wasserman test, which will be positive by this time. Sores of various kinds may appear in the lining of the mouth and throat, and around the genitals and rectum. There may be pain in the bones and joints, often a fever, headache, and feelings of general illness. The eyes may become affected and, occasionally, the membranes of the nervous system. The secondary stage of syphilis disappears by itself, but the symptoms may return because the germs are still present. This second stage is highly contagious.

These stages of syphilis: the *primary* (chancre), and the *secondary*, are together called *early syphilis*. Strangely enough, during early syphilis, the disease is most dangerous to others and least dangerous to the person who has it. It is in *late syphilis*, which may occur five, ten, or more years after the disease has been contracted, that the order is reversed, with the disease becoming less infectious to others and extremely dangerous to the victim.

LATE SYPHILIS

If undiscovered and untreated, syphilis may continue for many years before there is obvious harm to the body. If treatment is inadequate in the early stages, the blood test may become negative, but the person is still infected and vulnerable to the late, fatal stages.

Late syphilis may cause blindness or severe disease of the bones and joints, the skin, or the internal organs, since the unchecked spirochetes can invade every cell of the body. The forms of syphilis most often resulting in death are those that damage the nervous system and the heart.

Syphilis may attack the heart or the aortic valve and the main blood vessel leaving the heart, called the aorta. This causes disability or death from heart failure, or from rupture of the weakened aorta (aneurysm).

The most serious form of syphilis of the nervous system is *paresis*, a severe disorder of the functions of the mind. If untreated, paresis will cause complete insanity and death. Another nervous disorder is *tabes dorsalis*, or *locomotor ataxia*, with loss of sensation of position. The person does not know where his legs are and loses his balance in the dark.

One especially tragic form of this venereal disease is *congenital syphilis*, in which the germ is transmitted from the mother to the unborn in-

fant. This may happen when there is no visible sign of illness in the mother. Such babies may be born dead or are later seriously handicapped with deformities such as blindness or deafness. *All* pregnant women owe it to their future children to have a routine blood test for syphilis in the first months of pregnancy. Early treatment will always prevent infection of the unborn child.

Syphilis is very variable and may not show all, or even *any*, of the usual early symptoms. Detection requires routine testing for syphilis. This is done on admission to all good clinics and hospitals. It should also be included in every medical examination and should be conducted routinely and periodically, like free chest x-rays. These precautions are widely used at present, but they should be extended to include *everybody*.

The blood test for syphilis can and should be performed by every doctor free of charge, or at least for a very small fee. Enlightened employers see that routine blood tests for syphilis are carried out when hiring new workers. Besides the well-known Wassermann test, there are other equally good blood tests used in many parts of the country. You should insist that a blood test such as the Wassermann or its equivalent be carried out as part of any complete medical examination. Also, for your own benefit, urge your physician to examine the genital organs and rectum (see Checkups, page 546).

Before modern methods of rapid treatment, it was usually necessary to treat syphilis for approximately a year and a half. A common cause of the crippling and fatal effects of syphilis was the failure to continue treatment until cured. Even with modern methods of rapid treatment, it is still necessary to return for follow-up visits to make certain the disease is completely gone. The family physician may be able to undertake the complete treatment. If not, and if there is no large hospital or medical center in the community, the U. S. Public Health Service in Washington, D. C. can provide information regarding the nearest treatment center or clinic for syphilis.

Syphilis can be cured by early diagnosis and adequate treatment. Penicillin has now been added to the list of medications used successfully. Although education and publicity have dramatically reduced the number of cases, surveys show that syphilis is still very prevalent.

PREVENTION

The surest method of prevention is avoiding sexual intercourse with infected persons. Syphilis is not confined to prostitutes. It is impossible to tell by a person's appearance or social status whether he or she has

syphilis. The condom or rubber sheath prevents the passage of the spirochetes during intercourse. However, the neighboring skin and thighs may become infected afterward. The minimum precaution includes thorough soap and water washing of exposed areas of the skin in addition to the use of a condom. Although "sanitubes" are of some value, the fact that they are used after coitus may not ensure *prevention* of infection if the condom has not been used. A condom plus soap and water washing should never be omitted. If any sore appears on the sex organs, a competent physician should be consulted at once. Any of the other symptoms described should take you to the doctor without fail.

It is surprising that our great country, which has led in so many other medical improvements, was relatively late in starting an all-out fight against syphilis. The first serious attack on this Killer was launched under Dr. Thomas Parran, former Surgeon General of the U. S. Public Health Service. The constant barrage of pamphlets distributed throughout the armed forces has helped tremendously in fighting this disease. It has been shown that through education the number of cases of venereal diseases has been drastically reduced in many European countries, including the Scandinavian countries, England, and the Soviet Union.

Syphilis can be eliminated completely in our country if we all recognize that this sinister Killer breeds on shame and ignorance. It becomes a personal and social duty for all of us to expose the disease, wherever it may lurk. The health and happiness of too many families have been destroyed by false modesty and neglect.

Remember, your doctor does not sit in moral judgment on venereal diseases. He is interested only in prevention and cure.

APPENDICITIS

Although appendicitis is not one of the ten leading Killers, it claims the lives of from 15,000 to 20,000 people every year in the United States. It ranks high in the list of Killer diseases for children between the ages of ten and fourteen. It is most prevalent between the ages of ten and thirty, but there is no age that is completely immune. Fortunately, it is extremely uncommon in the first two years of life. If that were not true, pediatricians who see so many intestinal upsets in infants would be even more harassed than they are now.

Appendicitis is still a serious disease, and probably will continue to be unless some wonder drug can be found that will clear it up, thus eliminating the need for surgery.

When the appendix becomes inflamed and infected, the process can spread so fast that gangrene and rupture may set in within a matter of

hours. Rupture of the appendix leads to peritonitis, one of the most serious of all diseases.

On page 122 in the chapter on the parts of the body, I describe the appendix, its location and its apparent uselessness to the body.

CAUSE OF APPENDICITIS

As you can see from Illustration 33-6, the appendix is a hollow tube. If the end of this tube becomes plugged by a hard bit of fecal matter, intestinal worms, or other material, the normal drainage from the tubelike appendix cannot take place. The appendix then becomes susceptible to bacterial infection. Streptococci, staphylococci, colon bacilli, and other types of germs find this a fertile soil for their activities. The germs multiply and cause inflammation. Visualize the situation as a sort of boil which will rupture into the peritoneal cavity unless (1) the body's defenses overcome the infection or (2) the surgeon removes the infected appendix before the "boil" breaks and discharges the pus.

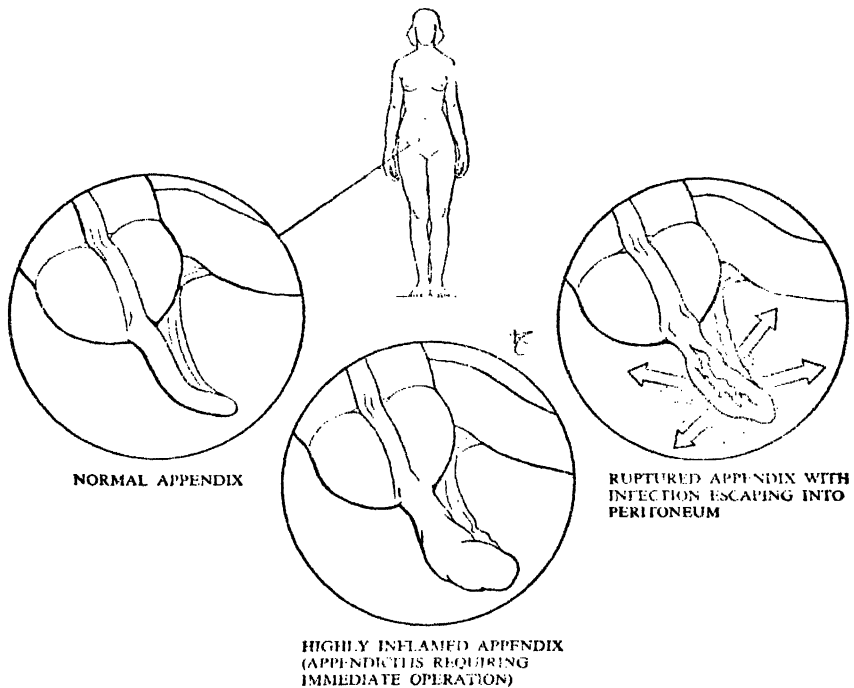


Illustration 33-6. APPENDICITIS AND RUPTURED APPENDIX.

SYMPTOMS OF APPENDICITIS

As the inflammation of the appendix develops, there are usually three main symptoms: (a) *nausea*, (b) *abdominal pain* which starts to localize in the lower right part over the appendix area, and (c) mild *fever* in adults; sometimes high fever in young children. There may also be vomiting, constipation, or diarrhea. Chills and convulsions, which are fairly characteristic of pneumonia, meningitis, and other severe infections, rarely occur at the onset of appendicitis in children.

DIAGNOSIS

In addition to these symptoms, the doctor looks for positive evidence of an inflamed appendix. There may be tenderness over the appendix when pressure is exerted there. Sometimes pain is experienced in the region of the appendix during an examination through the rectum, or through the vagina in the female patient. A laboratory test, the white blood count, is also helpful in making the diagnosis. The doctor always searches for other diseases which are sometimes mistaken for appendicitis, e.g., gallbladder attacks, kidney stone or kidney infection on the right side, even the onset of pneumonia, rheumatic fever, or diabetic coma. In women, there is the possibility of a ruptured ectopic pregnancy, a twisted ovarian cyst, or a hemorrhaging egg follicle at the middle of the menstrual cycle.

It should be apparent that great skill is required in making the diagnosis in certain cases when the symptoms and findings are not exactly typical. In such a situation your doctor may wish to have a consultation with a specialist. No reputable physician wishes to remove an appendix unnecessarily. However, one of the greatest tragedies of all is to see a patient who is disabled, or even dies, because of too great a delay in diagnosing a case of appendicitis which did not present typical symptoms. As the old medical saying puts it, "Better a live patient without an appendix than a dead one with his appendix in place." If two doctors agree that there is a real possibility of appendicitis, even though they are not completely certain of the diagnosis, my advice is: by all means have your appendix removed. The operation, when performed by a skilled operator in a good hospital, has a very low mortality rate. Healthy young people usually leave the hospital in less than a week after the appendix has been removed.

COMPLICATIONS

If the appendicitis goes on to the serious complication of peritonitis or to form a large abscess, the patient will require expert medical and

surgical skills, found only in a good hospital, to save his life. Fortunately, the situation is better than it was a few decades ago, because of the antibiotics. But never minimize the seriousness of an infection spreading from the appendix.

CHRONIC APPENDICITIS

In past decades, the diagnosis of chronic appendicitis was made frequently. A noninflamed, normal appendix would frequently be removed after such a diagnosis was made. Later it would be apparent that the symptoms arose because of an ailment located in the kidney, the intestines, the gallbladder, the ovaries—or even that they were due to a functional spastic colon.

There are recurrent attacks of acute appendicitis. However, it is doubtful that there is such a condition as chronic appendicitis. If such a diagnosis is made, it should be confirmed and seconded by a specialist in internal medicine before an operation is performed.

SHOULD THE APPENDIX EVER BE REMOVED AS A PREVENTIVE MEASURE?

If you happened to be a young lighthouse keeper, would it be sensible to have your appendix removed, rather than to risk waiting until appendicitis struck, since medical help might not be available? It seems to me that in the modern world when radio, fast boats, helicopters, etc., make it possible to reach almost any person, no matter how secluded, there is rarely any need for a *prophylactic* appendectomy. If I were twenty years old and setting out for a three-year expedition to the headwaters of the Amazon River, I think I should let a good surgeon remove my appendix. If I were the same age, and taking a trip across the ocean on a small cattle boat, I should gamble that the radio could summon aid quickly enough from a larger ship if appendicitis developed.

HOW YOU CAN SAVE A LIFE

It isn't often that one can do something that will save a life, but appendicitis is very apt to present such an opportunity.

Statistics show that when a person with appendicitis takes a laxative, his chance of dying is three times as great as it would be if no laxative had been taken. With more than one dose of a laxative, the possibility of dying is seven times as great. This is due to the fact that laxatives or

cathartics increase action in the intestine, and may also increase the pressure within the little sac. The more the pressure, the more likelihood that the sac will burst. The same is true for enemas. It has also been shown that a delay in operating lessens the chance of a cure. So many people have died as a result of taking "a good physic" when they were developing appendicitis that I am inclined to call laxatives the "first assistant" of this Killer.

Here are the rules to follow in order to save a life—your own, or another's—when appendicitis gives its warning signals. First of all, be sure to remember that **ANY ABDOMINAL PAIN LASTING FOR MORE THAN THREE OR FOUR HOURS MAY BE APPENDICITIS.**

1. *Call your doctor immediately.* If you have no doctor or cannot afford one, you can obtain a thorough examination for appendicitis in the emergency room of any reliable general hospital. You should be taken there by auto or taxi, if possible.
2. *Lie down and remain as quiet as possible.* Do not massage the abdomen.
3. *Take NOTHING by mouth—no food, water, or medicines.* Especially avoid taking any cathartic or laxative.
4. *Do not take an enema.*
5. *Do not use a hot-water bottle.* If the pain becomes very severe, an icepack may be applied.

The Disabling Diseases

IN THIS CHAPTER, I discuss the major disabling diseases. The reasons I have chosen some of them will be obvious to you. For example, I believe you will agree that diseases such as arthritis, asthma, and multiple sclerosis belong in this category, because they frequently disable, but rarely kill. Many other illnesses, however, are more difficult to classify. For example, polio, or infantile paralysis, is a major Disabler, but can also be a frightfully dangerous Killer. A stomach ulcer may grumble along for years causing a limited amount of disability, and then may erupt as a fatal hemorrhage or perforation.

I have selected for this chapter the diseases in which disability, either total or recurrent, is a *chief feature*. I consider this important, because people suffering from these diseases are apt to become the forgotten souls in modern medical care. This is particularly unfortunate because, as I plan to show you, something can be done to make life easier and better for patients with even the most severe disabling diseases.

Even though great progress has been made and is continually being made in preventing and curing the disabling effects of the diseases I discuss in this chapter, I think you would find it depressing to read about them all at once. Therefore I am listing them below, so you can choose the ones of most interest to you or your family, and read them first.

Peptic ulcer (including gastric and duodenal ulcer)

Asthma

Arthritis

Disabling diseases of the bones and joints

Poliomyelitis (infantile paralysis)

Multiple sclerosis

Epilepsy

Parkinsonism

Neuritis and neuralgia

Alcoholism

Cerebral palsy

Disabling diseases of the muscles

Loss of eyesight
 Diseases of the ear and the labyrinth
 Low blood pressure (hypotension)
 Influenza
 The anemias
 Ulcerative colitis
 Enlarged prostate gland
 Hernias
 Infectious mononucleosis
 Gonorrhea
 Brucellosis (undulant fever)
 Leprosy (Hansen's disease)
 Tropical diseases
 Malaria
 Amebiasis
 Sarcoidosis (Boeck's sarcoid)

There are many other disabling diseases which I have dealt with elsewhere in this book. These include the disabling mental illnesses such as schizophrenia, and almost all the "Killer" diseases such as heart disease, tuberculosis, etc., which frequently go through "Disabler" phases.

PEPTIC ULCER (gastric and duodenal types)

This disease is commonly referred to as "ulcers." Doctors use the term *peptic ulcer* because an ulcer is simply a sore. Adding the word *peptic*, which is derived from the Greek word for digestion, indicates that the sore is in the stomach or the duodenum, the part of the intestines which connects with the stomach.

Peptic ulcer is extremely prevalent, and appears to be on the increase. According to some estimates there are approximately ten million cases in this country alone. The amount of distress and disability it causes cannot even be estimated. It is more common in men than in women. It may occur at any age, although it is rarely seen in children under ten years old. Business executives and other people who work under very high tension appear to be particularly susceptible to peptic ulcer. This is undoubtedly due to the relationship between ulcers and worry or anxiety. For example, it was found that cases of peptic ulcer increased among the troops during wartime, especially those who were in combat zones.

The cause of ulcers is not yet fully understood, but it is definitely associated with the presence of an excessive amount of acid gastric

juice. This gastric juice, which is secreted by the stomach, is needed for digestion. In people with ulcers, there is excessive secretion, not only after eating, but also between meals and at night during sleep. Some people secrete larger quantities of this gastric juice than do others. We know that worry and anxiety can increase the secretion. For this reason, ulcers are considered to be a *psychosomatic disease*, which I discuss on page 249. Although we do not know exactly how ulcers are caused, we know that the excess secretion of gastric juice is bad for the ulcer and prevents it from healing.

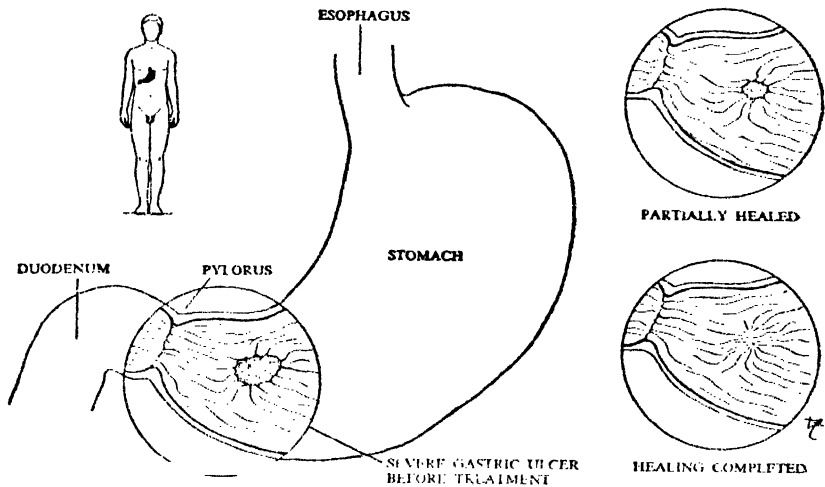


Illustration 34-1. SEVERE GASTRIC ULCER, BEFORE AND AFTER HEALING.

SYMPTOMS

1. *Pain and discomfort.* The most common symptoms of an ulcer are pain, a burning sensation, or discomfort in the upper abdomen, usually felt about two or three hours after meals or in the middle of the night, although the distress may occur sooner after meals. These so-called "hunger pains" generally subside promptly upon eating, drinking milk, or taking bicarbonate of soda. Nausea and vomiting can also occur.

2. *Bleeding.* Untreated peptic ulcers can cause a slow seeping of blood, resulting in anemia and the loss of health and strength associated with this.

The bleeding may be in the form of a sudden hemorrhage which threatens life itself. Blood is sometimes vomited and appears brownish

because of the effect of the stomach acid. Blood in the bowel movements may be responsible for black or tarry stools. In the case of a massive hemorrhage, the patient becomes weak, faint, and thirsty. He requires immediate medical attention and hospitalization. Often, full recovery is a slow process.

3. *Perforations.* An ulcer may perforate through the wall of the stomach or duodenum. This causes excruciating pain in the upper abdomen. Patients describe it as "the worst pain of my life." They must be rushed to the hospital, and operated upon immediately to prevent a fatal outcome.

DIAGNOSIS

In order to diagnose peptic ulcer, tests are made on the stomach acid. This is done by passing a tube through the mouth and esophagus, and taking a sample of the stomach contents. X-rays of the stomach and duodenum are also taken. A *gastroscopic* examination, in which the doctor looks into the stomach by means of an instrument resembling a periscope, is especially important in many cases.

Some people have an ulcer without realizing it. This disease may continue unsuspected for years, the symptoms vanishing for longer or shorter periods of time, so that the patient attributes them to "indigestion" or constipation. The latter frequently accompanies ulcers.

Anyone with symptoms *suggesting* a peptic ulcer should see a doctor promptly. There are a number of reasons for this. In the first place, there is no need to endure the discomfort or pain which sooner or later becomes disabling, if only in the sense that the victim, sometimes so gradually he scarcely realizes what is happening, is no longer able to enjoy life fully. In the second place, an ulcer which has caused only mild discomfort can suddenly threaten life. And, finally, there are other potentially dangerous diseases which can resemble a gastric ulcer, some of which require immediate treatment. They include:

1. *Cancer of the stomach.* Although a true peptic ulcer probably never develops into a cancer, it is often difficult to distinguish between the two. Gastroscopic examinations help to determine this. If the disease is an ulcer, it will respond and heal with medical treatment, whereas cancer of the stomach does not disappear with such treatment. However, if there is doubt, an operation must be performed.

2. *Chronic gastritis.* The lining of the stomach may undergo changes which can cause symptoms similar to those of an ulcer, including pain, burning, "indigestion" and even bleeding. These changes of the stomach lining, called chronic gastritis, can be distinguished from an ulcer by means of x-rays and the gastroscope.

3. *Chronic alcoholism.* This may cause varicose veins of the stomach or the nearby esophagus, which may imitate some parts of the ulcer picture (see page 692).

4. *Hiatus hernia.* This is the name for a condition which sometimes occurs when there is an opening in the diaphragm muscle, through which the stomach pushes, or "herniates." It can produce all the symptoms of an ulcer. Such herniation can be diagnosed by an x-ray, and, if necessary, treated by operation.

5. *Diseases of the gallbladder, liver, large intestine, and right kidney.* These organs are situated close to the stomach and duodenum, and may cause symptoms that are mistaken for an ulcer. X-rays and other tests are necessary to make the correct diagnosis and provide proper treatment.

Never attempt to make the diagnosis of ulcers yourself. A competent doctor will not rely on symptoms alone, but will make the diagnosis only after the most searching tests.

TREATMENT

Ulcers can be successfully treated and cured. *But there is no quick and easy cure for ulcers.* Complete cooperation of the patient is necessary. He must follow a carefully planned regime. The fundamentals of the treatment are:

Diet. At the very beginning, the patient may be given only milk and cream every hour. This is soothing to the stomach and neutralizes the acid. Following this, he is given bland foods. Roughage and highly seasoned foods are strictly avoided. In the early stages of treatment, the meals are small and frequent. When the patient "graduates" to three meals a day, the evening meal is light and is eaten early, about six P.M.

Medication. Medicines known as "antacids" which neutralize the stomach's acid may be helpful. They must be given under the close supervision of a doctor, for the human stomach is not a laboratory test tube, and it is impossible to determine in advance exactly how each patient will react. For this reason, *self-medication with any "ulcer cure" or antacid is dangerous.* Strong alkaline medicines are avoided today. Other medicines help the overactive stomach to rest, and reduce the production of acid. They may be prescribed at night when the stomach does not need to secrete gastric juices, because there is no food to digest.

Mental rest. Since worry and anxiety can cause, or contribute to the development of, an ulcer, and can prevent it from healing, an ulcer that has been healed by medical treatment may return if emotional tensions persist. Therefore, every effort is made to help the patient relax and take things easy. Medicines such as the barbiturates are sometimes given for this purpose.

Patients often do well in the early stages of treatment, only to grow worse again as soon as they return to their old habits of living. The doctor may be able to help them change certain habits of work or make better adjustment to daily life so that the tensions can be eliminated. Unfortunately, this is not always easy for the patient to do, since he is not always aware of his fears, worries, or anxieties. In such instances, it is important to get the help of a psychiatrist (see page 258).

Surgical operations. Various operations have been attempted for the relief of ulcer. In one of them the stomach contents are bypassed from the duodenum into the jejunum. This operation is called *gastro-enterostomy*. It is not as successful as some doctors once hoped it might be, because the ulcer may recur at the new opening between the stomach and intestine. This marginal or jejunal ulcer can be fully as troubling as the original one. In another operation, the acid-producing part of the stomach is cut away. This procedure is called *subtotal gastrectomy*. It is a drastic operation, and must be performed by an experienced surgeon. Still another operation, *vagotomy*, cuts the vagus nerves leading to the stomach, and thus reduces the acidity and motility of the stomach.

No patient should undertake an operation for relief of ulcer without knowing all the pros and cons. Even after surgery, there is rarely a complete cure. Unexpected complications sometimes follow each of the different types of surgical procedures. Before deciding on an operation, I advise you to ask your family doctor to arrange a consultation with a specialist in internal medicine or gastroenterology who may be able to suggest medical or psychological therapy which might eliminate the need for surgery.

ADVICE TO ULCER PATIENTS

There are three main reasons why ulcers cause so much pain and disability. I wish to emphasize again the two that I have already mentioned. First, patients tend to ignore the symptoms, feeling that they are not important or can be endured, and try to alleviate them with cathartics and other useless medicines. Second, individuals who

develop ulcers are frequently tense, inclined to drive themselves and to dislike taking things easy.

The third reason is that ulcer symptoms usually vanish with treatment long before the ulcer itself has healed. Doctors find that most difficulties occur in patients who do not stick to the treatment. Having abided by the rules for a time, they become neglectful and gradually forget them entirely.

You need not be disabled by an ulcer if:

1. You consult a doctor as soon as you observe any of its symptoms.
2. You learn, with the help of a psychiatrist, if necessary, how to avoid tensions.
3. You cooperate with your doctor until he, *not you*, decides your ulcer is healed.

ASTHMA

Asthma, technically called *bronchial asthma*, is a disease of the bronchial tubes which lead from the windpipe, or *trachea*, into the lungs. It will help you to understand this distressing and often disabling disease if you turn to page 110 on which I explain the nature and functions of the lungs and of these tubes.

The bronchial tubes ordinarily do not furnish any marked resistance to the entrance or exit of air, so that we are not even conscious of the fact that we continually inhale and exhale, at the rate of about sixteen times each minute. However, in asthmatic attacks the bronchial tubes tend to close down. If the attack is severe, the sufferer seems almost to be suffocating. He apparently uses all his strength, just trying to breathe. He becomes pale and bluish, and usually perspires. This spasm of the bronchial tubes can usually be relieved quickly by an injection of Adrenalin. Fortunately, most attacks are mild and do not last long. Many of them can be prevented or stopped by modern medical treatments.

Bronchial asthma is a chronic kind of illness, marked by these attacks. In severe cases, the bronchial tubes become swollen and offer greater resistance to treatment. Plugs of clinging mucus may form in the tubes and cause chronic irritation and coughing. They are dislodged and brought up as sputum. If the attacks are frequent, prolonged, and severe, the lung tissue is damaged. This puts a strain on the heart. Eventually, heart strain can result from severe, chronic asthma.

The average case of asthma is mild and is more of a recurrent

nuisance than a threat to health. Nevertheless, there is a small percentage of cases in which asthma is not only a Disabler but can even be a Killer. It is always essential to get, and follow, competent medical advice, especially in the case of young patients, before asthma can damage the heart or lungs.

CAUSES OF ASTHMA

Bronchial asthma can be caused in several, quite different, ways. That is one reason you should consult a doctor promptly, and never make your own decisions on the basis of some treatment which helped another asthmatic patient.

Allergies. One type of bronchial asthma is definitely allergic. An individual may have hay fever and asthma simultaneously during the ragweed season, or may experience attacks of asthma only at this time. Other pollens may be responsible, including animal fur or feathers, face powder, certain foods, in fact, any number of *allergens* (see page 739).

A person with asthma should, therefore, be tested for allergic sensitivity. It may require a great many tests and the efforts of a specialist in allergy and asthma to discover the responsible substance or substances. The patient, too, should become a "medical detective" and try to furnish the doctor with clues. A laboratory worker I know eventually tracked down the cause of his asthma, and it was confirmed by his doctor with tests. He could handle any animals except rabbits. Whenever he touched them or cleaned their cages, he developed an asthmatic attack. In this case, the cure was obvious: a change of job.

Infections. Many cases of bronchial asthma are associated with bacterial infections, especially of the sinuses, throat, and nose. Sometimes these improve very markedly if the infection clears up. Of course, it is important for such people to avoid colds, sinusitis, and infections of the nose, throat, and respiratory passages.

Nervous tension. Some cases of bronchial asthma do not seem to be caused by allergies or bacterial infections. They appear to be due to nervous tension, and often improve tremendously when the patient's emotional problems are solved with the help of a doctor who understands the patient's emotional as well as physical condition. In some instances this requires a psychiatrist (see page 258).

Even cases of asthma that have a physical cause are apt to become worse if the patient is emotionally disturbed or tense. For this reason

we usually include asthma among the *psychosomatic diseases* (see page 249).

DIAGNOSIS

Other diseases can cause wheezy, asthmaticlike breathing. Heart disease, obstructions in the bronchial tubes, and several other conditions can mimic bronchial asthma. Be sure to have an accurate diagnosis made by a competent physician. Cooperate in every way in helping the doctor discover the cause of your asthma. This may require the combined efforts of an allergy specialist, a specialist in internal medicine, and a nose and throat specialist. It is well worth while in order to avoid the years of suffering and disability that may result if the asthma causes permanent damage.

TREATMENT

People who attempt to treat asthma themselves take great risks. There is no medicine, and certainly no advertised "cure," that can correct this disease. Certain medicines are used effectively, including the antihistamines, ACTH, cortisone, and Adrenalin, but it requires great skill to administer these medicines and they should never be taken except under a doctor's orders.

A good doctor can help you avoid many attacks, and can treat the ones which come on despite preventive measures. The treatment varies according to the cause of the asthma. Most people with bronchial asthma can lead comfortable, useful lives if they rely on and cooperate with a competent doctor or hospital clinic.

Climate and asthma. Patients suffering from asthma may feel better or obtain complete relief by living in certain areas in this country. This is particularly true if the asthma is definitely related to sinusitis. These areas include: southern Arizona, especially the vicinity of Tucson and Phoenix, certain parts of central New Mexico, around Albuquerque, the desert areas of southern California, near Palm Springs, Banning, Indio, etc., and, to some extent, southwestern Texas, Colorado, and the southernmost portion of Florida.

Asthma sufferers who are planning a vacation should consider visiting one of these places. However, before making the decision to move permanently to any of them, a great many factors must be considered. For example, the summer heat of the desert areas is apt to be bad for people whose asthma is complicated by heart trouble. Many cases of asthma can be treated successfully at home. Be sure to read my

chapter on Climate and Illness (page 220) before making a decision to move in the hope of curing asthma.

ARTHRITIS

The correct definition of arthritis is an *inflammation of a joint*. However, the term is widely misused, and is frequently applied to vague aches in almost any part of the body. You cannot have arthritis in a part of the body such as the middle of the thigh, for example, because it has no joint. Joints of the body are found at the knees, wrists, elbows, fingers, and toes, and also the hips and shoulders. The neck and back have joints between the bones of the spine. Even if you do feel a pain in a joint, it may not always be due to arthritis, because there are many other parts that comprise the joint structure. These include ligaments, tendons, muscles, cartilage, and bursae.

Symptoms of chronic arthritis are pain, swelling, stiffness, and deformity in one or more joints. They may appear suddenly or come on gradually. The aches and pains are not always the same. Some people feel a sharp, burning, or grinding pain. Others liken it to a toothache. Moving the joint usually hurts, although sometimes it is merely stiff.

The underlying cause of many cases of chronic arthritis is unknown. There are certain conditions that set off attacks of arthritis. Some of them are: exposure to cold and dampness; a poorly balanced diet; infections of the teeth, tonsils, or other parts of the body; an injury to a joint or constant strain upon it; attempting physical labor that is too hard for one's age or strength; constant fatigue; great nervous tension. These factors also aggravate the painful symptoms of the disease.

These are some of the factors a doctor considers when arthritis symptoms appear. He will look for other causes too, because an occasional case of arthritis may be due to such diseases as gout or undulant fever.

The three commonest types of arthritis are:

1. Infectious arthritis
2. Osteoarthritis
3. Rheumatoid arthritis

The latter two are the most prevalent.

Is rheumatism the same as arthritis? Rheumatism has come to mean so many things to so many people, that it is almost impossible to define the word. Therefore, doctors like to use more specific words

for diseases of the joints, muscles, ligaments, and bursae. That is why I am not grouping these illnesses under the title "rheumatism," but instead describe them as arthritis, gout, bursitis, etc.

Infectious arthritis is a bacterial infection inside a joint. This can develop from a wound that damages the joint. Also, bacteria may get into a joint from the blood stream. An example of such a disease would be arthritis due to gonorrhea, in which the germs are carried from the infected, pus-containing genital organs through the blood to the joints. Infectious diseases such as tuberculosis, brucellosis or undulant fever may attack the joints. The infected joint is painful and may become swollen.

See your doctor if any joint hurts or becomes hot, swollen, or reddened. Treatment is very successful with the aid of penicillin and other modern medicines, but must be started promptly. Joints are precious. Treat them promptly.

Osteoarthritis is a most common joint disorder in people getting into old age. It rarely develops before a person is forty years old. This disease is due to wear and tear of the joint tissues and the growth of bony bumps which appear at the joints and interfere with ordinary movements. Some pain is felt but it is not severe. Any disablement is usually minor. Most people so affected need not fear serious crippling. Measures of relief from discomfort are provided for by doctors. Sometimes, an orthopedic specialist will be needed to decide if severe osteoarthritis needs special braces, exercises, or even surgical help.

Rheumatoid arthritis is the most serious form of arthritis. It is common among young adults, usually starting before the age of forty. Individuals with mild cases need not fear that deformities of the joints necessarily lie in store for them. But they should be under the *regular care* of a physician to make sure the disease does not get worse. Acute attacks of rheumatoid arthritis can be followed by permanent changes in the joints, leaving them stiff and deformed. This disease differs from an attack of rheumatic fever, in which the joints always return to normal. Severe arthritis, like rheumatic fever, can produce many symptoms, such as a run-down feeling, poor appetite, anemia, fever, pleurisy.

The cause of rheumatoid arthritis is not definitely known. Some medical experts believe that it may be caused by an *allergy* to the streptococcal bacteria. In acute attacks, the joints are painful and may become swollen. The disease strikes at the structure of the joint. After the disease subsides, during the healing process, there may be scarring and new bone formation, which may result in deformities and some loss of the ability to move the joints.

Stiffness of the joints, including the fingers, which cannot be bent

or unbent, is one of the most serious complications of rheumatoid arthritis. For people who have had repeated attacks over a course of years, activities may be seriously curtailed.

TREATMENT

It is most important that patients with arthritis be seen regularly by a physician. Many doctors do not wish to undertake, or are not experienced in, the long-term care of this disease. Patients may often have to be referred to specialists in arthritis or to medical centers in the large cities. There are a number of very useful measures for relieving or slowing down the effects of this disease. During and after attacks, when the patient would tend not to move his joints, it is important to prevent the muscles from becoming atrophied by certain exercises, massage, and warm applications which the doctor can prescribe and teach.

The treatment of mild attacks of rheumatoid arthritis usually consists of (a) adequate physical and emotional rest, (b) applications of heat to the affected joints, and (c) aspirin (or Bufferin), for relief of the pain. More severe cases may require the use of cortisone, ACTH, or the injection of a special medicine containing gold. These three medicines are potentially toxic and must be administered under the constant supervision of a skilled doctor.

If the joints have become so stiffened that they cannot be moved, then some help may be obtained by reconstructive surgical operations. These usually can be performed only by a specialist in orthopedic surgery.

Some general advice about treatment. Go to a doctor or hospital clinic if you have pain, stiffness, or swelling in a joint. Don't put off going while you try a new diet that someone recommends for "rheumatism." Don't rub an inflamed joint with medicine or try to limber it up with exercise; this may be very harmful. In one type of arthritis, the painful joint is made worse by rubbing or bending it. In another type, massage is helpful. Let your doctor decide the proper treatment. Prompt treatment often relieves painful symptoms and prevents the disease from growing worse. Give your doctor plenty of time. It takes time and patience and knowledge to treat a chronic disease like arthritis.

Arthritis is usually not cured or halted by a *change of climate*. However, some patients feel more comfortable where the weather stays warm. A person with chronic arthritis should not consider a move if the added expense would cause worry. Good medical care, rest, and freedom from worry are all very necessary parts of the treatment. In any case,

a change of climate should be tried only on the advice of a doctor who knows the patient and understands his condition. The doctor may even want to consult a specialist in arthritis before making his decision (see Chapter 10 on Climate and Illness, page 220).

Special types of arthritis. There is a form of arthritis which is limited almost entirely to the spine. If severe, it causes a stiff, fused vertebral column or "poker" spine. It is called *spondylitis* or *Marie-Strumpell disease*.

Children are not often afflicted by crippling arthritis, but they do occasionally get the disease. The severe form in children is called *Still's disease*.

Gout is a generalized disease in which uric acid appears in excessive quantities in the blood, tissues, and urine. Gout may affect the joints, and, like the severest forms of rheumatoid arthritis, can even destroy them. In addition to the damage to the joints, gout can injure the kidneys. It frequently starts with attacks of terribly severe pain in one joint, often the big toe. It is much more common in men than women. There are good dietary and medical treatments for gout which should be followed faithfully under a doctor's care. Unfortunately, because of all the jokes about gout and high living, many people do not realize that it can progress into a terribly disabling disease of the joints or kidneys, or both.

OTHER DISABLING CONDITIONS OF JOINTS AND BONES

By far the most serious of the disabling illnesses of the joints is arthritis. However, there are other ailments of the joint structures which can be disabling unless treated properly. Of these, *backache* and *bursitis* are very common.

BACKACHES

The backbone, or the spine, is a column made up of many small bones which are held together by tissues called ligaments. Between each layer of bone lie disks made of cartilage. The disks act as cushions for the bones. Through the spinal column runs a tube which contains the spinal cord. Many of the main nerves of the body extend from the spinal cord. Because of the way the bones and disks are loosely strung together, the backbone is very flexible and allows for bending and other kinds of body movements.

Backaches may be due to many causes. They may be the result of a slipped disk, a condition we will discuss in detail, sacroiliac strain, sciatic neuritis, arthritis, or poor posture. Incorrect posture is one of the commonest causes of backache.

When you were a child in school, no doubt your teacher told you many times to stand up straight. Yet as you grew older, you tended to neglect this good advice. It becomes too easy to slump over a desk or get into the habit of stooping. The housewife who carries children and bundles of shopping around for many hours of the day and then tries to sleep on a sagging bed wonders why she wakes up with a pain in the back. When your back is thrown out of shape by poor posture or strained from carrying too much weight, the bones, ligaments, nerves, and muscles are either pressed closely together or stretched too far apart, causing pain in either case.

If you are otherwise healthy but still develop backaches, they may be due to any one of the following causes:

1. *Your mattress may be soft and sagging, thus curving your spine when you sleep.* If you cannot afford a new bed and mattress, use a bedboard between the mattress and the bed springs. These can be purchased in department stores, or can be made from lumber. This will straighten out the bed very well.

2. *It may be only your posture that is wrong.* A good test of posture is to stand with your back against the wall, your weight resting evenly on your feet. Your shoulder blades and buttocks should touch the wall. If only your shoulders touch, you are round shouldered; if only the middle of your back touches, your spine is curved too much. If you stand up straight, you will find that, automatically, your abdomen is held in also, a good way to prevent sagging abdominal muscles!

3. *You may be carrying too much at one time,* for instance, a heavy shopping bag in one hand. This tends to curve your spine either to the right or to the left, causing the back muscles and ligaments to become strained.

4. *Your work habits may be wrong.* If you must sit at a typewriter or desk all day, don't slump, but sit upright. It does seem easier to let your head drop forward and your chest fall in, but good posture will repay you in greater energy and a strong, painless back. When you sit or stand correctly, the internal organs are not squeezed together, and it is easier for them to function well. Also, you will breathe better. If your job requires that you do a lot of bending, make sure you take time out at regular intervals to stretch and straighten up.

5. *Watch out for drafts.* Try to avoid sitting with your back exposed to drafts from hallways, open doors, and windows.

6. *In women, backaches may be related to abnormalities in the position*

of the pelvic organs. These are sometimes related to past pregnancies, but women who have not been pregnant may also have such backaches.

In many instances, none of the above possible causes may seem to explain the difficulty.

In any case of backache, it is advisable to try a bedboard between the mattress and springs for at least a week. At first, it may be more difficult to fall asleep on this harder-than-usual surface, but after a few nights, most people become accustomed to it and would miss it if it were removed. Aspirin may be helpful, two tablets every four hours. A heat pad, or moist heat (see page 515), may provide relief.

When you get a backache that persists despite the above measures, go to your doctor for a checkup. The pain may be due to a minor condition such as poor posture, or a more serious illness.

When you are examined for backache, the doctor tests your legs and back by special exercises such as bending the thighs up to a right angle and other positions, and having you bend back. He also tests the back by tapping along the spine. He may take x-rays of your back to see if any disks or bones are out of place. A misplaced disk is a very common cause of acute backaches. This may happen when you use force against something, like trying to open a window that is stuck. The result is a sudden dislocation, such as a sacroiliac strain

RUPTURED INTERVERTEBRAL DISK, OR "SLIPPED DISK"

Between the bones of the spine lie disks made of cartilage. Cartilage is the firm material which shapes the nose and ears. Sometimes these disks slip out partially from between the back bones, and press on the nerve roots emerging from the spinal cord.

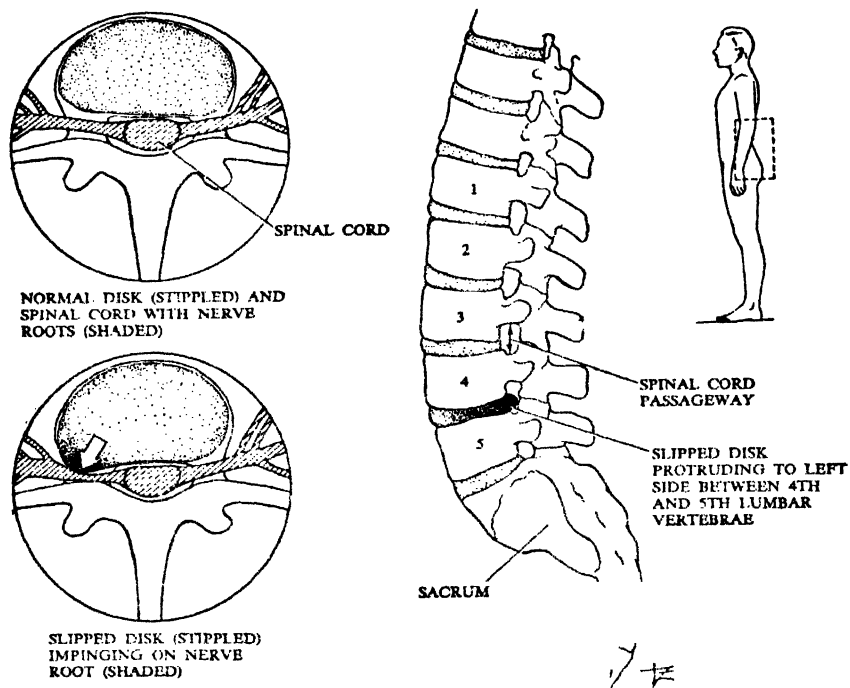
This condition, "slipped disk," is a cause of much pain and disability. The onset usually follows strains of the back. But it may also begin without any evident reason.

Ordinarily, there is pain in the lower part of the back which gets worse during coughing, sneezing, or straining. Later, the pain may spread down one or both legs. Symptoms usually come and go, but, eventually, they may severely handicap activity.

This condition was not fully understood until recent years, and the symptoms were formerly attributed to "sciatica," "lumbago," or other vague ailments.

Osteopaths and chiropractors have sometimes produced temporary relief by manipulation, but I am convinced that such treatment more often aggravates the disorder.

Although doctors sometimes can employ nonsurgical treatment, the



34-2. SLIPPED INTERVERTEBRAL DISK.

LEFT: Cross sections of vertebra and disk as viewed from above. RIGHT: Lower spine as viewed from left side; nerve roots omitted.

ruptured disk or disks may have to be removed eventually by surgery. In the hands of competent orthopedic or neuro-surgeons this simple and safe operation is usually successful, and many incapacitated sufferers have been restored to full activity and comfort.

Treatment of backaches varies with the cause. The doctor takes a careful history of your complaints. He will ask you questions about the type of work you do, whether you engage in exercises, when the pains began, how often you have them, and in what part of the back. If you are a woman, he will want to know details about your menstruation and whether you have any children. Severe menses and strains caused by childbearing have made many women suffer from backaches. Or, it may be arthritis that is causing the trouble.

The various medical measures which may be undertaken will not be described in detail. Improvement of posture, operations for slipped disks and tumors, massage, and x-ray treatment for certain tumors are

among the kinds of treatment the doctor will recommend, depending on the cause.

BURSITIS

This is an inflammation of the lubricating parts around joints. In the illustration, you can see how a normal bursa helps a joint work smoothly. Also, you will see an inflamed bursa containing a deposit of calcium material.

Our joints would creak and wear out if there were no efficient "oiling system." Nature has provided this in the smooth surfaces inside the joints, and the bursae around the joints. Sometimes these smoothly working bursae become inflamed. When they do, there is severe pain, which makes it impossible to move the adjacent joint.

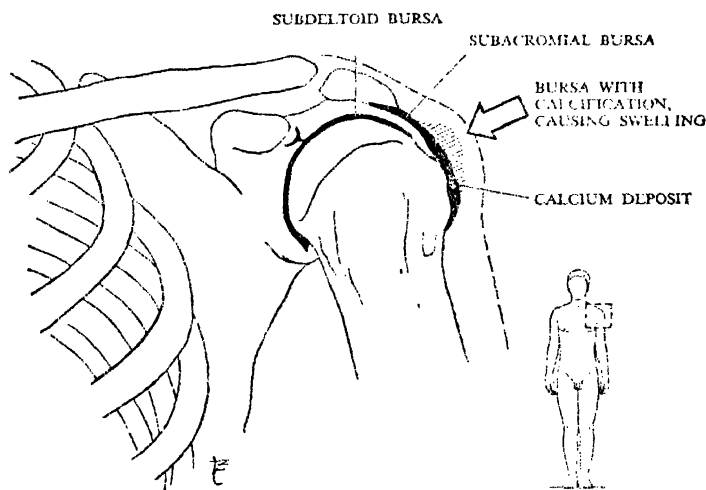


Illustration 34-3. BURSITIS WITH CALCIFICATION.

Bursitis may manifest itself in an acute or a chronic form. The *acute* form comes on suddenly. Sometimes, chilling or a draft on the joint may set it off. Or excessive use of the joint, for example, in typing or piano playing or athletics, may inflame the bursa. Usually the shoulder is affected, but almost any joint in the body can be the site of bursitis. The acute attack is very disabling because of the intense pain. The inflamed bursa can sometimes be felt as a tender swelling near the shoulder or whichever joint is affected. Sometimes nature will heal the acute attack by permitting the inflamed spot to rupture and drain itself. This will be helped by resting the joint in

a sling or by going to bed. Moist heat frequently helps, whereas dry heat or diathermy may cause more pain. Other patients find that cold applications are more effective. Usually, a short period of experimentation will tell what will best relieve the pain. If aspirin, Bufferin, or Empirin does not reduce the pain, then your doctor may have to prescribe Demerol or codeine for a few days.

If nature does not relieve the attack, a skilled doctor can usually help by inserting a needle into the inflamed area and draining out the fluid and calcium salts. At the same time, he may puncture the bursa in several places to prevent reaccumulation of the fluid and calcium salts. The doctor will generally instill a small amount of Novocaine or other local anesthetic to relieve the pain. Usually, if the needle finds the right area, an acute attack of bursitis is quickly relieved. There is hope that new medicines such as cortisone, hydrocortisone, and ACTH will prove even more effective in relieving the acute attacks.

Chronic bursitis may follow the acute attack. There is continued pain and limitation of motion around the joint. In the shoulder, an x-ray will usually reveal calcium salts, which have been deposited in one of the important bursae around the joint. If rest, heat, and medicines do not relieve the condition, surgery may be required to remove the deposits of calcium salts or free the area of chronic inflammation. Such an operation generally requires the skill of a specialist in orthopedic surgery. Sometimes chronic bursitis consists of a painless swelling of the bursa around a main joint. "Housemaid's knee," "tennis elbow," and "typist's shoulder," indicate occupations that may keep a bursa acutely or chronically painful or swollen.

DISABLING INFECTIONS OF THE BONES

Until the recent introduction of medicines which can destroy the staphylococci and streptococci, prolonged disability frequently resulted from bone infections caused by these germs. They may cause an acute infection of the bone, similar to a small boil in the skin. This is called *acute osteomyelitis*, which is indeed serious because the germs can invade the whole body, and, if they do not kill, can lead to severe chronic bone disease. This infection, which causes acute pain and fever, generally strikes at the long bones of the arms and legs. Children and young adults are most often affected. *Prompt treatment* with penicillin and other antibiotics will usually eradicate the infection. If not, surgery will be required to drain the affected area. The acute attack is an emergency. If your doctor is not available, go to the nearest general hospital, or, if the patient is a child, to a hospital that has a children's department.

Chronic osteomyelitis. Thanks to the new antibiotics, there has been a great decrease in this terribly disabling bone disease. Formerly in patients afflicted with osteomyelitis, the shin bone, for example, might continue to drain pus for years, despite surgery and the best medical treatment available. Now even the chronic cases can be greatly helped because the antibiotics aid the surgeon in performing operations to remove the dead, infected pieces of bone and let fresh bone grow.

Tuberculosis of the bones and joints. Most of you have seen individuals with disabling hunchback, which is caused by the erosive action of tuberculosis on the bones of the spine. This is called *Pott's disease* (see illustration on page 180). Tuberculosis can affect almost every bone, as well as the hip joint and other joints. This form of tuberculosis is sometimes due to a specific strain of the tuberculosis germ from infected cows. The bovine strain is communicated through *unpasteurized* milk obtained from tuberculous cows. As I indicate in the picture on page 180, there is no better argument for pasteurization of all milk and milk products than the assurance it gives that tuberculosis germs will not be ingested.

MISCELLANEOUS DISABILITIES

There are many congenital and acquired disabling conditions that affect the joints and bones in addition to those already described. I want to mention a few common ones, especially those which can be helped.

Congenital dislocation of the hip. This condition is present at birth, more frequently in female than male children. However, it may not be evident until the child starts to walk. Then it will be noticed that the gait is not symmetrical. It is extremely important to diagnose this condition before the child does much walking with the weakened hip joint. At this time, proper treatment can cure the condition without surgical operation. If the condition is neglected, even for a year or two, surgery will be needed to reconstruct the hip joint. Such surgery will require a specialist in orthopedics. If necessary, the child should be taken to the nearest medical center that specializes in children's surgery. Sometimes, for people living in isolated areas, this means an expensive journey of hundreds of miles. But the child will bless you for it in later life when he learns that he can walk normally, and not be handicapped with the limp and waddling gait that accompanies congenital dislocation of the hip. Also, a neglected dislocated hip joint can wear

out so badly in later life that major reconstructive surgery will be required to prevent total incapacitation.

Club foot. This is another congenital condition which seriously affects the foot. It can be corrected by early treatment. Sometimes only strapping or casts are required. Serious cases will need expert orthopedic surgery as advised above for congenital hip disease.

Frozen shoulder. This very disabling limitation of motion of the important shoulder joint can develop after bursitis. The condition, which results from bands of adhesions around the joint, can also be due to other causes. If exercises, rest, and medicines do not help you, then a doctor who has had experience in the technique may free the adhesions by manipulation of the shoulder. This is done under anesthesia, and must be performed expertly to avoid tearing or breaking important structures in and around the joint.

Reconstructive surgery of joints. Regardless of the origin of the joint trouble, there is usually something that can be done to improve its function. I have mentioned the help that arthritic patients can obtain (see page 670). Joints may be injured in accidents. Sometimes such joints may require special orthopedic operations to reconstruct them. New joints may be fashioned out of metal. Such surgery can be performed only by surgeons who are very skilled in this highly specialized field of reconstructive orthopedics.

FRACTURES

Fractures usually cause only temporary disability. However, if the bone does not heal properly, there may be disability for life. Fractures in elderly people tend to knit poorly, and may need special attention. Also, in the growing child, fractures must be set correctly so that there is no interference with growth. I have described the common types of fractures and how to apply first aid for them on page 480. Also, in the section on Accidents, page 456, I have stressed the need for prevention. However, fractures do occur more and more frequently in our high-speed age. Some of the worst result from automobile accidents.

There is a tremendous difference in fractures and in the time and skill required to treat them. A noncomplicated fracture usually requires only a plaster cast which can be applied by the family doctor, and heals over in several weeks. However, a double break of the forearm

presents a serious problem. A specialist in orthopedic surgery may have to carry out the difficult procedure of inserting a metal pin in one bone and fastening a plate on the other. It is well worth the effort involved as it will result in a strong, normal arm. Fractures of the long bones, especially of the thigh, usually require special apparatus, and cannot be treated successfully by casts. Always ask your doctor, "What can be done to bring about the *best* healing?" It is worth a considerable investment in time and money to prevent a shortened bone, or impaired movement of a joint.

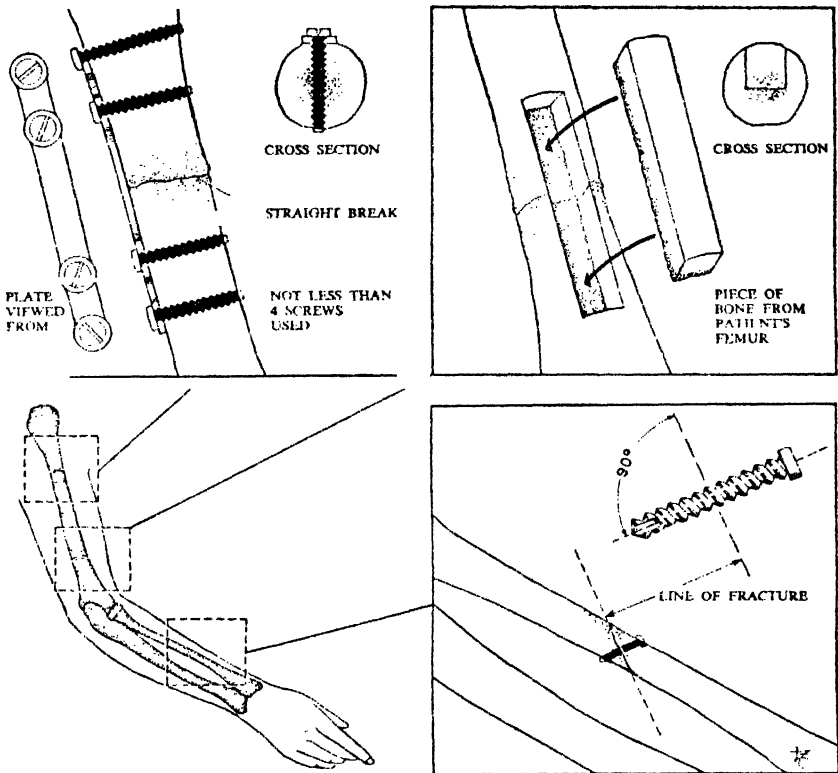


Illustration 3-4-4.

SURGICAL REPAIR OF FRACTURES.

MAIN METHODS OF HELPING BONE TO KNIT PROPERLY.

LOWER LEFT: Diagram showing possible locations for surgical repair in arm.
 UPPER LEFT: Metal (vitallium) plate and screws, especially for large bones.
 UPPER RIGHT: Bone graft; section of bone transplanted from patient.
 LOWER RIGHT: Vitallium screw holding small bone together.

POLIOMYELITIS (Infantile Paralysis)

Polio, short for *poliomyelitis*, has ranked high among the disabling diseases. For that reason, everyone rejoiced to hear that a vaccine had been found to prevent polio, and that victory appeared to be near.

Vaccination is based on the principle of *immunity*, which I describe fully on page 174. Briefly, it is effective because our bodies can create an immunity to some diseases when we are given injections of the proper germs, which are either dead or so weakened that they are no longer dangerous. I am confident that polio will be wiped out as completely as smallpox has been.

However, it will take time to discover such things as the effectiveness of any vaccine against all types of polio, because some of them may become more serious as others are eliminated. And, of course, it takes time to discover how long and how complete the immunity will be. It would be most foolhardy to be careless about polio now, when the battle is almost won.

Polio is an infection of the central nervous system which attacks the cells of nerves that control the muscles. It may destroy or weaken them, causing paralysis. Most commonly, it affects the arms and legs. Less frequently, it paralyzes the muscles of breathing or swallowing. Actually, it can affect any muscle. *It does not affect the mind.*

Most cases that are reported occur in young children but polio attacks people of all ages. Although it may strike at any time of the year, the majority of cases are in the summer.

Before going any further, I want to remind you that this disease is not often a killer. In addition, the majority of those who have it do not suffer from paralysis or weakened muscles. Of those whose muscles are weakened, many are never paralyzed; and of those whose muscles are paralyzed, more than half recover without serious aftereffects. I emphasize this because I want you to realize that there is no reason to become panicky about polio, even though I urge you not to ignore it until it has been completely eliminated.

Polio is caused by a virus (see page 172). Actually, there are at least three types of polio viruses, causing different kinds of poliomyelitis. Small as this organism is, scientists have been able to isolate and study it, and have learned many of its habits. It has been found in the nose and mouth, and also in excreta from the intestines.

It has been found not only in polio patients, but in people who do not appear to have the disease. There is proof that a great many people have been infected by polio without being sick at all or else they were so slightly indisposed that they thought they had a cold or the "flu." These individuals are lucky because even this slight in-

fection enabled them to build up some immunity to the disease. Older people are more likely than younger ones to have developed an immunity against polio by repeated mild exposures to it. This probably accounts for the fact that relatively few people catch polio when they are exposed to it, and for the fact that the majority of victims are children or young adults.

Gamma globulin. Individuals who have had even very mild cases of polio carry in their blood the substance they have manufactured in fighting this disease. It helps them combat further attacks of polio-causing germs. This is called *active immunity*. The immunizing substance is in a fraction of the blood called the *gamma globulin*. This can be injected into other people, in order to help them to resist or conquer the disease. *Passive immunity* is the term given to immunity acquired in this way. I discuss this fully in Chapter 7.

PRECAUTIONS AGAINST POLIO

Follow the advice of your doctor or board of health in regard to inoculations against polio for yourself and your children.

Here are some rules to follow. The first two are important if there are cases of polio in your community. The others should be observed under all circumstances.

□

Avoid crowds and strangers; keep children with their own friends. Since there are various types of polio, do not risk contact with strains to which you have not developed some resistance. Children in particular should remain with people with whom they have been associating daily.

Postpone operations that are not urgent. Again, this is particularly important in the case of children, for example, with optional operations for the removal of tonsils and adenoids, and also vaccinations and inoculations.

Do not get overtired by work, play, or travel. It will lower your resistance to the polio virus.

Avoid getting chilled. This, too, lowers resistance, so don't bathe or swim too long in cold water. Take off wet clothes at once.

Keep clean. Wash your hands thoroughly before eating and after using the toilet. Be sure the water you drink or swim in is pure. Keep food clean and covered.

Watch for early signs of sickness.

If polio comes, act quickly. Call your doctor at once.

The polio virus is probably spread not only by patients who are actually sick with the disease, but by those who have mild, unrecognized cases, and carriers who, without ever being ill, carry the virus about in their bodies. It may spread from objects contaminated by patients or carriers.

SYMPTOMS

The early symptoms of polio include fever, headache, vomiting, fretfulness, drowsiness, sore throat, change in bowel habits, stiffness and pain in the back and neck. These do not necessarily mean polio. *But don't ignore them.* It is true that many diseases of childhood start in this way, but they, too, can be serious, and it is best not to dismiss them as "just a cold" or "upset stomach." Call your doctor promptly, for early good treatment can prevent not only death, but the disabling effects of this disease.

TREATMENT

During its acute stages, this disease should be treated in a hospital if possible, preferably one specializing in poliomyelitis. An iron lung or respirator may be needed if the muscles of breathing become paralyzed. Skilled care may be essential to prevent muscles from becoming permanently weakened.

If paralysis of the arms or legs occurs, rehabilitation will be necessary. Remarkable success has been achieved by the proper techniques, and patients who would otherwise be crippled have been restored to activity.

In some cases, reconstructive surgery is required to give better use of the impaired limbs. Your doctor or the National Foundation for Infantile Paralysis will know where such treatments can be obtained. The national headquarters are at 120 Broadway, New York 5, N.Y., but there are local offices in many communities. Don't be reluctant to ask for financial help if you cannot afford it. The Foundation was established for the sole purpose of fighting this disabling disease in every way.

MULTIPLE SCLEROSIS

Multiple sclerosis is one of the most common diseases of the nervous system in the United States. Second only to epilepsy, it is far more widespread than infantile paralysis. However, it is by no means as

well known to the public. In the first place, it is not a killer, and in the second, it strikes far less dramatically than polio does, being of a chronic nature. Periods of improvement usually alternate with periods of symptoms.

But multiple sclerosis can be extremely disabling. Although patients may recover almost completely from severely paralyzing attacks of this disease, medical science has not as yet discovered any way of halting it. In recent years, it has received more attention from the public, and increased research will undoubtedly eventually uncover its cause and cure.

In multiple sclerosis, hardened patches due to inflammation are scattered at random throughout the brain and spinal cord, interfering with the nerves in these areas. Therefore, the disease is also called *disseminated sclerosis*. Why these patches become inflamed and hardened is still unknown. They usually occur in young adults.

The hard patches come and go. The symptoms depend on the portion of the nervous system that is affected. Since the location, extent, and duration of the injuries vary, it is difficult to describe a *typical* case of multiple sclerosis.

SYMPTOMS AND EFFECTS OF MULTIPLE SCLEROSIS

The most common of these include:

1. A tremor or shaking of the limbs, often making the patient weak, and interfering with fine movements such as sewing or writing. Speech may become slow and monotonous.
2. Unsteadiness in walking, and an inability to maintain balance.
3. Stiffness in walking, the knees failing to bend.
4. Difficulties in vision. The patient may "see double" or lose part of the visual field. For example, he may be unable to see toward the upper left with either eye.
5. Paralysis, which may occur in any part of the body.

TREATMENT

Good general care is necessary to keep up the body's health and resistance to disease, as multiple sclerosis is apt to grow worse following any illness. Expert nursing care may be required. Physiotherapy, including massage and exercise, will prevent the affected muscles from becoming unnecessarily weakened or paralyzed. Because this disease frequently grows worse when there are emotional disturbances, and because patients who are disabled by it may become depressed, a psychiatrist or psychotherapist (see page 251) may be helpful.

Patients with multiple sclerosis can often lead long, useful lives, as did Dr. Norman Goldsmith, who practiced medicine despite severe multiple sclerosis, as described in *When Doctors Are Patients* (published by W.W. Norton Co., New York 15, N.Y.). The National Multiple Sclerosis Society, also known as AARMS, 270 Park Avenue, New York 17, N.Y., provides information and assistance concerning all phases of this disease, including rehabilitation.

EPILEPSY

In recent years the public has been adopting a sensibly frank and open attitude toward many illnesses, including tuberculosis and venereal disease. However, for some reason, a "hush-hush" policy regarding epilepsy still prevails.

In the past, epilepsy was looked upon as a disgrace. People who suffered from it were shunned, regarded as insane or, at the least, "peculiar." Parents would try to hide the fact that a child had epilepsy. Consequently, people with epilepsy had to endure not only the disease, but humiliation and a sense of inferiority that set them apart from others. Naturally, this often actually made them feel "peculiar." In addition, the fact that so many cases of epilepsy were concealed hampered medical research.

Even so, medical science has made great progress in understanding and treating epilepsy. We know now that it is *not* a kind of insanity. Epileptics are *not* "inferior." Nor are they superior, even though a number of exceptional people have had epilepsy, including Julius Caesar, Peter the Great, Lord Byron, Dostoevski, and Flaubert. Brain damage or mental deterioration occurs in only a very small percentage of certain types of epilepsy, or in cases which have been grossly neglected over a long period of years. In the overwhelming majority of cases medical treatment can, to a great extent, prevent disability.

SYMPTOMS OF EPILEPSY

The word epilepsy means a seizure. It is specifically applied to a certain type of seizure characterized by a loss of consciousness, momentary or more prolonged, and involuntary convulsive movements. Some lay people call this a "fit."

In minor seizures, or *petit mal*, the loss of consciousness is momentary. Although there is often a twitching about the eyes or mouth, there is no change of posture. The epileptic remains seated or standing, and appears to have had no more than a lapse of attention or a moment of absent-mindedness.

In major seizures, or *grand mal*, the victim falls to the floor unconscious, often foaming at the mouth, biting, and shaking his limbs violently. Involuntary bowel movements or the passage of urine may occur. The patient may hurt himself during such a seizure. The observer may mistake it for fainting, "blacking out," or even a "stroke," although the convulsive movements should indicate that it is an attack of epilepsy. Fortunately, people with epilepsy frequently experience a warning called the *aura*, before a major attack occurs, and this enables them to lie down and avoid falls.

What to Do if Someone Has an Epileptic Seizure

1. At the beginning of the attack, lower him to the floor. Remove any hard objects he may strike.
2. Put an object between the back teeth on one side of his mouth. Make sure it is too big to swallow. A folded handkerchief or a roll of paper will do. The purpose is to prevent him from biting his tongue or breaking his front teeth. Do not try to force the mouth open but wait for it to relax momentarily. Keep your fingers out of his mouth or you may be badly bitten.
3. Do not try to force any liquids down his throat, or move him during a convulsion. When the attack is over, make sure he rests quietly until he regains consciousness fully. Do not rush him to a hospital unless he has a series of seizures.

An epileptic seizure is the result of a temporary disturbance of the brain impulses, an abnormal electrical discharge, so to speak. It might be compared to the static you get on your radio. Medically, it is called *cerebral dysrhythmia*, meaning a disturbance of the brain's normal rhythm. Apart from the temporary disturbance, there is nothing wrong with the brain, as far as intelligence and emotions are concerned.

DIAGNOSIS

Anyone who has fainting spells, fleeting unconsciousness, convulsions, or fits of any sort should be studied by a competent doctor. They may be due to a disease other than epilepsy, for example, diseases of the heart or arteries, nervous reflex disorders, and psychoneuroses. In order to make a diagnosis of epilepsy, a number of tests may be required. An *electroencephalograph* record is helpful. This is made by a machine with electrodes, which are placed on the head to record the brain waves, showing the electrical activity of the brain. Some individuals who are entirely

well, however, have brain waves like those seen in epilepsy. X-rays of the skull, and perhaps air injections into the ventricles of the brain in order to permit special x-rays, may be necessary.

If these tests reveal that the patient has epilepsy, the services of a specialist will probably be required. It is essential to discover what type of epilepsy it is, since the treatment varies considerably.

CAUSE AND TREATMENT

Acquired epilepsy, also called *symptomatic epilepsy*. In epilepsy of this type, the cause is physical, such as a brain tumor or a wound or blow on the head. These injuries irritate the brain and set off the abnormal electrical discharge. A cure may be achieved by an operation to remove the tumor or repair the injury. In *Jacksonian epilepsy*, the portion of the brain controlling the muscles may be irritated or diseased. The convulsions will involve a specific group of muscles, such as those in a hand or leg.

Ordinary epilepsy is also called *genuine epilepsy* or *idiopathic epilepsy*, which means cause unknown. This is the most common type, and it is what most people have in mind when they speak of epilepsy. It usually begins early in life. This type of epilepsy is not directly inherited, although it is generally believed that a predisposition or tendency to it may run in families. While the cause is still unknown, a great deal is known about it, especially in regard to treatment.

There are now several very effective medicines which entirely eliminate or greatly reduce the seizures. These include phenobarbital, Dilantin, Tridione, and others. They must be administered *only* by a competent physician. Individual cases vary a great deal and continuous care is essential, especially during the early stages of treatment, to determine the most effective medicine and dosage. After the patient's convulsions are under control, he may need to see the doctor only infrequently.

However, it is vitally important for every patient to visit his doctor at intervals, and continue taking the medicines unless he is instructed to stop. Patients who stop medication without such instructions from their physicians may suffer a recurrence of their attacks, which must then be brought under control all over again. After there have been no attacks for a sufficient period of time, the doctor may gradually cut down the medication. But this should never be undertaken by the patient.

These new medicines can usually prevent the disabling effects of epilepsy. Individuals with epilepsy can now hold responsible positions and lead practically normal lives, with few restrictions beyond those imposed in having to take medicine and consult their doctors. Psychiatric

help (see page 258) is valuable in some cases, especially with patients who are emotionally disturbed for any reason. Organizations such as the National Epilepsy League, 130 North Wells Street, Chicago 6, Illinois, and the United Epilepsy Association, 113 West 57th Street, New York 19, N.Y., help individuals suffering from epilepsy to find medical aid and jobs, and teach them to help themselves.

PARKINSONISM

Parkinsonism is a disease of the brain which is characterized by stiffness of muscles and tremors. It has been called *paralysis agitans*. At first the patient may be troubled by mild tremors of the hands and nodding of the head. Then it is seen that his face does not have its usual mobility. For instance, the capacity to smile may have disappeared. This is called the "masklike" face of parkinsonism. As the disease advances, the shaking tremors of the muscles progress, and may involve the entire body. The back tends to become bent forward. Yet the mind is unaffected. If the patient is fortunate enough to have a job that requires chiefly mental effort, he can frequently continue working for many years.

The disease follows certain types of brain damage, such as a virus infection due to the *encephalitis lethargica* germ, or sleeping sickness. Or it may result from carbon monoxide poisoning (page 193). In later life, the cause may be hardening of the arteries in the brain (see page 616). However, in a large number of patients the cause is not apparent. Therefore, these cases are classified as the idiopathic (cause unknown) type of the disease. All types tend to have essentially the same symptoms and course.

TREATMENT

Several medicines are helpful. Some of these are the atropine group, such as belladonna; the Artane medicines; and the antihistaminics, such as Benadryl. Surgical treatment can be applied in special types of cases. Any patient with this disease should have periodic consultations with a specialist to discuss the best course of treatment to be carried out by the family doctor over the many years the disease tends to last.

NEURITIS AND NEURALGIA

When pain accompanies an illness, it is usually due to the fact that the disease has inflamed an organ and irritated the ends of the *pain*

nerves, or pain fibers. Thus, an infection of the skin such as a boil is terribly painful because there are many pain nerves in the skin. These become irritated by the stretching of the boil and the toxic action of the pus and bacteria. However, there are conditions in which the nerves *themselves* become inflamed. Such nerve inflammation is called *neuritis*. If the irritation affects a nerve which carries pain fibers, there will be severe pain perceived by the brain, which is the central receiving station for all pain nerve fibers. We usually speak of this pain as neuralgia. When nerves that do not carry pain fibers, such as the *motor nerves* to muscles, are destroyed by the polio virus, there may be total paralysis without any pain. It may seem strange to you that large areas of the brain substance itself may be cut without any pain sensation. This is due to the fact that pain nerves go to only special areas of the brain.

Diseases such as multiple sclerosis, polio, and parkinsonism affect the brain and/or spinal cord. Other maladies affect the *peripheral nerves* which connect the brain and spinal cord with the muscles, organs, skin, eyes, etc. The many peripheral nerves may be affected by a variety of diseases and injuries. When a peripheral nerve is involved, the condition is called *neuritis* or *neuralgia*.

The peripheral nerves usually contain both pain and motor fibers. Thus a disease which affects the peripheral nerves would be expected to, and usually does, cause painful symptoms plus some paralysis of muscle power.

GENERALIZED NEURITIS

Certain toxic substances such as lead, arsenic, and mercury may produce a generalized poisoning of the peripheral nerves, with paralysis of the limbs, and also pain and tenderness. There are many other causes of generalized neuritis, including alcoholism, vitamin deficiencies such as pellagra and beri-beri, some types of allergy, diabetes, severe vomiting of pregnancy, thallium toxicity, and some virus and bacterial infections.

Some attacks of generalized neuritis begin with fever and other symptoms of an acute illness. On the other hand, neuritis caused by lead and alcohol toxicity comes on very slowly over the course of weeks or months.

Treatment and prevention. In most instances, the attack will subside by itself or when the toxic substance is eliminated. Rest and a good diet containing extra vitamins, especially of the B group (see page 35), are helpful. Physiotherapy may relieve the pain or the paralysis. Prevention of generalized neuritis is based on the knowledge of the dangers of poor

nutrition (page 34), industrial hazards (page 191), chronic alcoholism (page 692), and infections.

SPECIAL TYPES OF NEURITIS AND NEURALGIA

It frequently happens that, instead of a generalized irritation of the nerves, only one nerve is afflicted. For example, a person may be sleeping in a cold draft which blows on the left side of the face. The next morning, the side of the face which is "powered" by muscles controlled through the facial nerve, may be temporarily paralyzed. This type of paralysis is called *facial palsy*, or *Bell's palsy*. When caused by drafts and infections, the paralysis clears up after some days or weeks. Sometimes, a tumor will press on the nerve and cause facial palsy, or the nerve may be injured by a blow, a cut, or a bullet. In that event, the results of treatment will depend on the success in treating the tumor or injury. If the cause of facial palsy is not apparent, or the condition does not improve, your doctor is justified in sending you to a neurologist for the opinion of a specialist.

SCIATICA

Consult the illustration on page 690, showing how the sciatic nerve traverses the long distance from the spinal column to the legs. The sciatic nerve is the widest nerve in the body, as well as being of great length. It is exposed to many different kinds of injury in the back, in the pelvis, and even along its course in the lower extremity.

Symptoms and causes. Injury or inflammation of the sciatic nerve causes pain which travels down the leg from the thigh or back into the feet and toes. Certain muscles of the leg may be partly or completely paralyzed, making it difficult to move the thigh and leg. When this occurs, the doctor makes a careful search for the origin of the sciatica. He knows that this will generally reveal some definite reason for the neuralgic pain. There may be a back injury (see page 673), or irritation from arthritis of the spine, or pressure on the nerve which occurs during some types of work. Also, certain diseases such as diabetes or gout may be the inciting factor. It is true that some cases of sciatica will turn out to be the idiopathic variety, that is, without known cause. However, because of the long and painful and disabling course of severe sciatica, it is worth considerable time and money to have every possible cause investigated. If the diagnosis has been made, the cure will be facilitated by correcting the underlying trouble. In addition, sedatives and physiotherapy may be required to relieve the pain or disability.

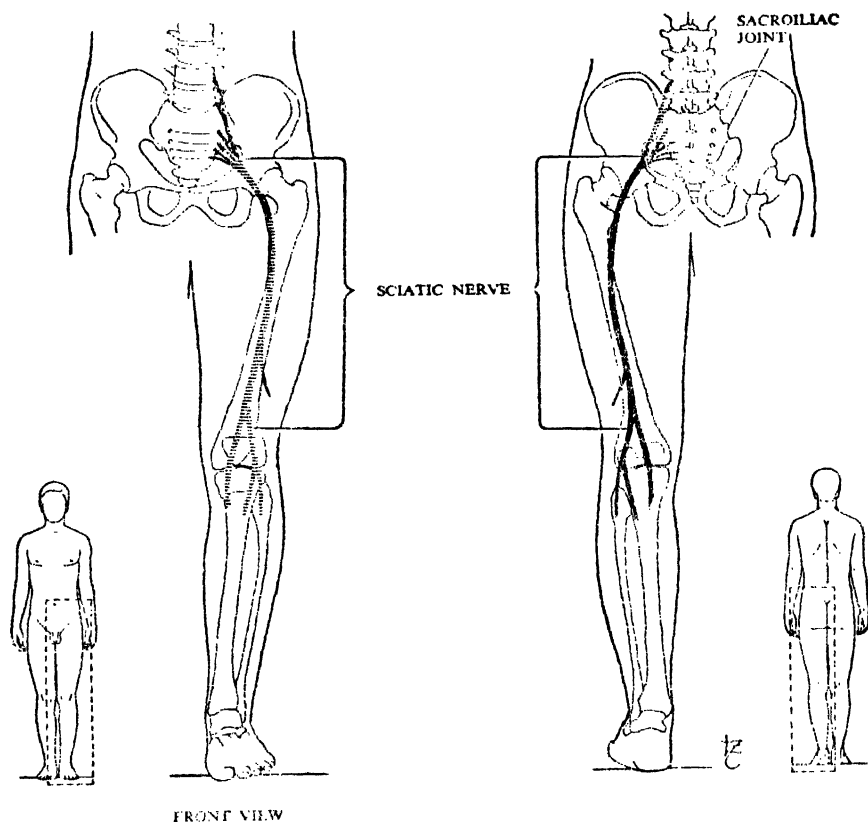


Illustration 34-5. LOCATION OF SCIATIC NERVE.

SHINGLES (HERPES ZOSTER)

Herpes zoster, or shingles (the word *herpes* means blisters, and *zoster* means *girdle*), is a terribly painful inflammation of the sections of the nerves which have just emerged from the spinal cord. This illness is probably caused by a virus. Fever and prostration may accompany the pain when the malady first develops. After the illness starts, small blisters or vesicles usually, but not always, appear on the skin along the course of the affected nerves. Frequently, this will be on the chest. But there is a form of shingles which inflames the nerves leading to the face and eyes. This form is specially dangerous because it may cause damage to the vision. The ordinary attack of shingles runs its painful course in a matter of days or weeks, and does not leave any residual difficulties. However, in some instances, most frequently in elderly people, there is a persist-

ence of pain which may be terribly disabling. In this event, special treatments and medicines can be given by your doctor to relieve the pain. Incidentally, there is no truth to the old saying that "the patient will die if the blisters appear on both sides of the body and meet in the center."

Some people think an ordinary attack of "shingles" is too trivial to warrant a doctor's time. On the contrary, your doctor knows the discomfort and complications this illness can cause, and he is eager to relieve and prevent the symptoms.

NEURITIS OF OTHER SPINAL NERVES

Any one of the many nerves traveling out from the spine may be affected by injury or disease. For example, the nerves which lie between the ribs may become inflamed, and cause pain in the chest which may resemble pleurisy and even a heart attack. This form of nerve ailment is called *intercostal neuritis* or *neuralgia*. Similarly, the nerves traveling down the neck to the arm may be subject to various injuries and diseases. For example, a chronic pain in the hand or arm is sometimes traced to the irritation caused by the pressure of an extra rib in the neck. Doctors call this the *cervical rib syndrome*. Sometimes, too vigorous pulling on the nerves in the neck, such as might occur in difficult obstetrical deliveries, causes the condition known as *brachial nerve palsy* which may lead to paralysis of the arm.

NEURITIS OF THE CRANIAL NERVES

I have mentioned ailments like sciatica which strike at the spinal cord nerves. However, there are also *twelve pairs* of important nerves leading directly from the brain. These are called *cranial nerves*. I have described Bell's palsy which results from inflammation of the facial or seventh cranial nerve. There is another nerve, the *trigeminal*, or fifth cranial nerve, which also ends in the face and jaws. This nerve may be the source of a neuralgia which causes spasms of pain on one side of the face. This *trigeminal neuralgia* is also called *tic douloureux*. It may be set off by a draft of cold air, by chewing, or by other trigger factors. Both medicines and surgical operations can relieve this terribly painful malady.

The nerves leading to the retina of the eye may be involved in various ailments. This condition is called *optic neuritis*, and because of its potential danger to vision, requires immediate treatment. Any of the other cranial nerves may be damaged by infections, tumors, and toxins. The antibiotic medicine, *streptomycin*, can injure the eighth cranial nerve which helps control the sense of balance in the internal ear. Any disturbances of vision, hearing, balancing, swallowing, taste, or speech, may

be signals of trouble in the cranial nerves, and should be mentioned to a physician at once.

INJURIES TO NERVES

The peripheral nerves may be cut, bruised, or torn by fractured bones, blows, or gunshot wounds. Nerves have a capacity to heal and regenerate. A torn or cut nerve should be treated by a surgeon who specializes in such work. If necessary, go hundreds of miles for such treatment if your doctor advises it, rather than take a chance on paralysis and other serious consequences of nerve injuries.

Read again my comments in the First Aid chapter on how to avoid injury to nerves after a bone has been broken.

ALCOHOLISM

Alcoholism is one of the greatest disabling diseases. I am not referring to moderate drinking, or even to excessive drinking with its hangovers which, although certainly disabling, occur only occasionally. It is hard to draw a fine line between drinking in moderation, drinking to excess, and habitual drinking, or chronic alcoholism. On page 14 I discuss these, and also explain the effect which alcohol has on the body. It is not, as it seems to be, a stimulant, but actually a depressant. When I speak of the habitual drinker, I mean anyone who craves and is dependent on alcohol, drinking regularly and excessively, so that it interferes with his or her work, home life, and normal relationships with other people.

In order to understand fully the reasons why a person becomes a habitual drinker, read the section of this book devoted to *You and Your Mind*.

Briefly, the habitual drinker is badly adjusted emotionally, a basically unhappy person who seeks happiness, or escape from unhappiness, by drinking. Unfortunately, this does not solve his problems, but merely adds to them. His drinking may cause him to lose his job, his wife, the respect of those he cares for and, eventually, his emotional, mental, and physical health.

Under the effects of alcohol, the drinker may feel he has rid himself of the inhibitions that made him feel shy and inferior. But he also loses those that made him behave in a socially acceptable manner. Under the impression that alcohol makes him feel at ease, he fails to realize, or does not place sufficient emphasis upon, the fact that it slows down his thinking processes and his reflexes. Judgment and coordination are impaired, so that accidents result, especially when driving an automobile. It is im-

possible even to estimate how much disability has been caused in this way not only to the drinker but to his innocent victims.

DISABLING ILLNESSES RESULTING FROM HABITUAL DRINKING

In many cases these are not due directly to the effect of alcohol, but to the fact that habitual drinkers tend not to eat properly. They get their required calories from alcohol itself which is a food, providing fuel for the body. However, although it contains calories, alcohol lacks vitamins, minerals, and other essentials without which the body may suffer from nutritional disorders (see page 34). The appetite usually becomes poor, and general malnutrition results.

1. *Effects on the nervous system.* These include *neuritis*, an inflammation of the nerves, usually associated with pain. In *polyneuritis* or *Korsakoff's disease*, the nerves of the limbs, particularly of the foot and wrist, are affected. It is often accompanied by memory disorders. *Delirium tremens*, or "D.T.'s," is an acute condition which is particularly apt to occur if the habitual drinker is suddenly deprived of alcohol. It is vividly described in the book and the motion picture called *The Lost Weekend*. The patient's fingers, legs, or entire body may shake. He is extremely confused, suffering from hallucinations in which he may see "pink elephants" or feel "ants crawling under his skin." This is a serious disease and, unless he receives proper medical care, the patient may suffer heart failure or get pneumonia. *Mental deterioration* is a real possibility in habitual drinkers.

2. *Cirrhosis of the liver.* I describe this potential Killer on page 647. Although it is by no means limited to habitual drinkers, they are more susceptible to it than is the average person. It may be caused by the nutritional deficiencies that are produced by excessive use of alcohol in place of food.

3. *Involvement of the eyes.* In certain instances, *alcohol amblyopia* or loss of central vision may result. This condition is not to be confused with blindness caused by drinking methyl alcohol (wood alcohol) which is substituted for or mixed with ethyl alcohol (grain alcohol) because it is cheaper or more easily obtained. *Alcohol amblyopia* may result from prolonged use of even the highest quality alcoholic beverages.

4. *Involvement of other organs.* The heart and kidneys may be impaired as an indirect result of chronic alcoholism. Gastric disturbances, such as "catarrh" and excessive bowel activity, and circulatory disorders may afflict the habitual drinker. As in the case of cirrhosis of the liver, he is apt to suffer from *acne rosacea* (see page 157), in which the blood vessels of the face, especially of the nose, become enlarged.

5. *Infections.* Habitual drinking usually lowers the resistance to in-

fectious diseases. This is particularly true of *lobar pneumonia* which I describe on page 642 and which has a higher death rate among drinkers than among nondrinkers.

TREATMENT

Any disease brought about by habitual drinking must be treated by a doctor. The disease exists just as truly as though it were caused in any other way. *Simply giving up alcohol is not enough*, and may even be contraindicated.

Many of these conditions can be cured or improved by medical care and proper diet. Injections of vitamins may be required.

The treatment of *alcoholism itself* is a complicated matter. Doctors prefer the term "rehabilitation" to "cure." The three most widely used methods are: aversion methods, organizational methods, and psychotherapy.

1. *The Aversion Method.* This method is still in the experimental stage. It should be attempted only under a physician's care, preferably in a sanatorium, where successful results are sometimes obtained. It consists in giving the patient a medicine that induces vomiting, either just before or with an alcoholic drink. As a result, the patient comes to associate the nausea with the drink, and develops an aversion to anything with alcohol in it. Recently a medicine called *Antabuse* has been employed. It has no effect on the patient unless he takes an alcoholic drink, in which case it causes distress.

These aversion methods do not get at the root of the problem.

2. *The Organizational Method.* The best example of this is Alcoholics Anonymous, an organization of individuals who have conquered or are trying to conquer their own habitual drinking, and to help others with their problems. From their own experiences, these people have learned how to encourage and stimulate others in their desire to stop drinking. Meetings and discussions provide the individual with an opportunity to air his problems, which is a form of psychotherapy (see page 254). For some people, especially those who are convinced, however mistakenly, that "only an alcoholic can understand and not condemn another alcoholic," this organization has been extremely helpful. It has branches in many communities. The national address is P.O. Box 459, Grand Central Annex, New York 17, N.Y.

3. *Psychotherapy.* This method can be used alone or in conjunction with either of the other two. Its purpose is to help the patient to understand the reasons for his drinking, and to solve his emotional and mental problems so that he will no longer need the escape provided by alcohol.

I discuss psychotherapy fully on page 251. Organizations such as the local and state mental health associations and others which provide assistance in obtaining this kind of help are listed on page 279.

In my opinion, anyone who is a chronic drinker should consult a physician who has some training or ability in psychiatry. In the first place, the drinker may be suffering from a real mental disorder, such as early schizophrenia or a manic-depressive psychosis (see pages 268 and 269). In such instances he probably requires intensive and immediate psychiatric care. In the second place, only a doctor is capable of deciding which form of treatment will best help the individual patient.

Remember, doctors do not sit in moral judgment. They are not critical of an individual because his emotional difficulties have led him to seek the wrong way out. Organizations such as The National Committee on Alcoholism, 2 East 103rd Street, New York 29, N.Y., and the Yale Plan Clinics sponsored by Yale University help habitual drinkers to find the road to rehabilitation.

CEREBRAL PALSY

This is one of the most common causes of disabilities. It is estimated that there are 200,000 people with cerebral palsy in this country. It is one of the saddest of the disabling diseases because it strikes at infants, many of whom are treated as though they were helpless mental and physical cripples for the rest of their lives. This is particularly tragic because, in the overwhelming majority of cases, a great deal can be done to help the victims of cerebral palsy.

Cerebral palsy is due to damage in one or more of the three main areas of the brain. Previously it was assumed that the brain had been injured during birth, probably by forceps. Now we realize that the injury occurs more frequently before the baby is born, and sometimes after birth. We have also found that in only a small percentage of cases does the injury cause mental deficiency. It is generally of such a nature that it interferes with the nerves controlling the muscles. As a result, the victim of cerebral palsy may *appear* to be an imbecile, for example, by drooling, grunting instead of speaking, and making strange gestures and grimaces. Of course, many children with cerebral palsy fail to develop normally because they are treated as if they were hopeless idiots.

The injury to the brain may cause (a) *spastic* paralysis, with stiffness and impaired movement of the muscles. Such a patient will walk with a scissorslike gait; (b) *tremors*, and strange movements of the limbs and

the head, which may be accompanied by bizarre grimaces; (c) *poor coordination*.

TREATMENT

This varies according to the nature and extent of the injury. Certain medicines help to relieve muscular spasms. Some deformities can be corrected by surgical means. But training is the key that has opened the door to a useful, normal life for countless people suffering from cerebral palsy. The earlier this treatment begins, the less difficulty there will be in overcoming or avoiding the disabilities.

Usually the parent or physician can observe indications of cerebral palsy when a baby is only a few months old. Such an infant should be examined at a medical center that specializes in this disease. It is extremely important for the parents of children with cerebral palsy to *learn how to help them*. They must understand that it is not kindness to do everything for a child with cerebral palsy instead of encouraging him in the difficult task of doing things himself. Helping such a child learn to talk, walk, and do the many things which are so easy for the average child and so difficult for one whose muscles do not respond in the normal way, requires a great deal of skill and patience. Methods vary according to the type of cerebral palsy from which the child is suffering. For example, *spastic* children are usually timid and shy, while *athetoid* children, whose muscles tend to be relaxed rather than stiff, are apt to be fearless.

The United Cerebral Palsy Association, Inc., 369 Lexington Avenue, New York 17, N.Y., which has branches in many cities, and the American Academy for Cerebral Palsy, 4743 North Drake Street, Chicago 25, Ill., can give help and encouragement. It is most heartening to see the miracles which time, patience, and knowledge can work in many cases of cerebral palsy. Many victims of cerebral palsy have made remarkable progress at the School of Corrective Motor Education for Cerebral Palsy, East Hampton, Long Island, N.Y., with the help of Dr. Earl R. Carlson, himself a victim of cerebral palsy which he describes in his autobiography, *Born That Way*.

Parents whose children are mentally retarded as a result of cerebral palsy should get in touch with the National Association for Retarded Children, 129 East 52nd Street, New York 22, N.Y., or one of its local branches. They will find that a great deal can be done to help the retarded child make his maximum contribution to society, and to help the family make the necessary adjustments so that the other members will not be unduly affected.

It is never too late for a patient with cerebral palsy to have a complete evaluation of his condition, for good results can be obtained later in life.

DISABLING DISEASES OF THE MUSCLES

In polio and other diseases that affect nerves or the brain, the muscles are disabled because the nerves leading to them have been injured or destroyed. In other words, in polio, in multiple sclerosis, and in a stroke, there is nothing wrong with the muscles *at first*. However, when the nerves leading to muscles no longer stimulate them, the muscles waste away or atrophy from lack of use.

In contrast to the nerve type of muscle illness, there are several diseases of the muscles themselves which cause severe disabilities. Of these, the two most important are *muscular dystrophy* and *myasthenia gravis*.

MUSCULAR DYSTROPHY

This is a particularly sad disabling disease because it strikes chiefly at young children and teen-agers. The muscles are weakened and shriveled away gradually by the disease, which, in the childhood type, has usually shown itself by the age of six. It occurs much more frequently in males than in females. The disease affects important muscles, even those of the trunk of the body. As it progresses, it may incapacitate the patient so completely that he cannot even stand or sit. However, there are many forms of the disease, and not all lead to total incapacitation.

There is a less extensive form of muscular dystrophy which usually appears between the ages of ten and twenty. This form is apt to involve the muscles of the face and the shoulders. However, it does not always spare the leg or trunk muscles.

Because of the way this variety of the disease affects muscles, it is referred to as the *fascioscapulohumeral type*. Usually, patients with this type will live out their years, and the fortunate ones will have rather mild disability.

Treatment. At the present time there is no really effective therapy. However, research physicians are studying this illness and hope to be able to improve the condition of these patients. Patients with this illness should be in touch at regular intervals with a doctor, a clinic that treats this illness, or with the National Foundation for Muscular Dystrophy, Inc., 250 West 57th Street, New York 19, N.Y., so as to keep informed about new developments. Also, there are certain general items of therapy

which I advise for these patients. (a) Work with a sympathetic doctor who will help maintain health at the best possible level. For example, many patients with muscular dystrophy become obese. This should be avoided. (b) The doctor will aid in finding the *best type of work within the muscle capacities* of the patient. (c) He will help maintain morale, and if necessary arrange for some psychotherapy to overcome the depressed feelings that such a prolonged disabling illness may engender.

MYASTHENIA GRAVIS

In myasthenia gravis, there appears to be a chemical defect at the sites where the nerves and muscles interact. As a result, the muscles do not function properly. People with this illness find that certain muscles tire very quickly on exertion. Also, there is a feeling of weakness in the muscles. Muscles frequently affected are those of the face, eyelids, larynx, and throat. Therefore, the patient may first detect the onset of myasthenia gravis because his eyelids droop, or there is trouble in swallowing a drink of water.

There is no true paralysis of the muscles, and they do not usually shrivel away. However, in severe forms the disease can be terribly disabling or even fatal because it may involve the vital muscles of swallowing or even breathing. Fortunately, there are both medical and surgical treatments which are helpful to a considerable number of these patients. A medicine called *Neostigmine* will reverse the disordered chemistry at the nerve-muscle junction in a short time. It is one of the most amazing sights in medical practice to see a patient with drooping eyelids, hands that cannot be clenched, arms that cannot be moved because of excessive weakness, suddenly come to life within a few minutes after the administration of Neostigmine.

In addition to this medication, there are several others that are helpful. Removal of the thymus gland has also been found helpful, *even curative*, in some instances.

Patients with *myasthenia gravis* should have a complete evaluation of their illness made by a specialist in this disease. Individuals in smaller communities may have to arrange to go to the large clinics maintained for this disease at Johns Hopkins Medical School, Harvard Medical School, and a number of our other leading schools and medical centers. Your family doctor can make the arrangements.

OTHER DISABLING DISEASES OF MUSCLES

A less common condition of the muscles is *familial periodic paralysis*, in which the muscles undergo temporary, intermittent paralysis. It has

been found that this is a functional disease associated with a low content of the vital chemical, potassium, in the blood serum. Administration of potassium will alleviate or prevent the attacks. Another familial muscle disease is *myotonia dystrophica*, in which there is weakness and wasting of the muscles. Cataracts of the eyes may accompany this illness. Another muscle disabler, which tends to run in families, is *peroneal muscular atrophy*, also called *Charcot-Marie-Tooth disease*. This disease, which can spread to other areas than the leg muscles where it starts, tends to be remarkably slow in its progress. Sometimes there are associated nerve disturbances in the spinal cord.

LOSS OF EYESIGHT

On page 131 I have discussed everyday care of the eyes, and how to prevent loss of vision, by guarding against glaucoma, infections, and injury.

Unfortunately, despite the best that modern medicine and surgery can do, there are still many people whose vision is severely and irreparably damaged, or who are totally blind.

Let me at this point urge every blind or near-blind person who has not done so to review the situation with his doctor or an eye specialist selected by his doctor. You may not know, for example, that some blind people have had sight restored by the operation in which a cornea, obtained from an eye bank, is grafted in place of the diseased one. Also, many cataracts can now be operated earlier than was once advised (see page 132). Other newly devised operations are helping people whose condition would have been considered hopeless until a short time ago.

What about those who must accept blindness? Let me first suggest that they take heart by learning about blind people who have lived useful, enjoyable lives. I recommend the inspiring story of famous Helen Keller, blind *and* deaf since early childhood, as well as more recent books such as *Keep Your Head Up*, Mr. Putnam in which young Peter Putnam tells with humor about his adventures with his seeing-eye dog, following the accident that blinded him but also opened many new doors to living, and Dr. Elliott Dobson's story in *When Doctors Are Patients*, which he tells under the title "The Light Within." Although blind, Dr. Dobson continues his large practice of internal medicine and his lectures to medical students. In addition, he has a happy family life and many social engagements. When I had lunch with him recently we talked enthusiastically about medicine, friends, and other things for almost two hours. At no time did the waiter realize that he was serving a blind man, so expert was Dr. Dobson in handling the knives, forks, and hot dishes.

I was puzzled when he said, "I got up early and read an exciting novel this morning," for I knew he did not read Braille. He meant that he had enjoyed a "talking book" on his phonograph.

There are many agencies which help blind and partially blind people to find solutions to their problems, including the Braille Institute of America, Inc., 741 Vermont Avenue, Los Angeles 29, Cal., the Hadley Correspondence School for the Blind, 620 Lincoln Avenue, Winnetka, Ill., The Seeing Eye, Inc., Morristown, New Jersey, and other local as well as national organizations. Federal agencies help provide jobs and other opportunities. When blindness proves too upsetting emotionally, psychiatric assistance should be obtained (see page 258).

DISEASES OF THE EAR AND THE LABYRINTH

I discuss care of the ears, detection and prevention of deafness, and hearing aids on page 135. Workers in noisy trades such as riveting should take precautions for the prevention of deafness. Sportsmen often forget that trapshooting and pistol shooting may impair the hearing in the ear nearer to the sound of the shot. It is important to remember that 2 to 3 per cent of school children, and 10 per cent of adults, have some hearing impairment which should be discovered and, if necessary, treated to prevent further disability. Remarkable progress has been made in enabling little children whose hearing is drastically impaired to develop normally, especially if they receive help early.

The hearing nerve is closely connected with the nerve leading from the balancing mechanism located in the innermost portion of the ear. Disturbances of the balancing mechanism, the labyrinth, may cause so much ringing in the ears that hearing is also impaired. One of the principal diseases of the delicate balancing structure in *Ménière's disease*, in which there may be ringing in the ears, *tinnitus*, and some deafness for many years. In acute attacks there may be disabling dizziness, nausea, and vomiting. The individual suffering such an attack may actually keel over from the violent dizziness. There are both medical and surgical treatments for this disease which will require the advice of a specialist in diseases of the ear (an otologist), or examination in the ear diseases clinic of a hospital.

Deaf people will receive valuable hints and much inspiration from the chapter on this subject by Dr. Max Samter in *When Doctors Are Patients*. Also, there is a remarkable account of successful adaptation, by Dr. John Crawford, on "Living Without a Balancing Mechanism" in the same book.

There are a number of agencies, both governmental and voluntary, to help the deaf and hard of hearing. These are listed on page 590.

LOW BLOOD PRESSURE (Hypotension)

Low blood pressure seldom causes true illness. Diseases in which chronic low blood pressure occurs are also rare. All these cases combined are so few in number that they would hardly warrant consideration if it were not for the fact that many people *consider themselves disabled*—and arrange their lives accordingly—because their blood pressure is low. *They worry for no adequate reason.*

It would be helpful if these cases were spoken of as “low normal blood pressure” or “lower-than-average blood pressure” rather than as “low blood pressure,” which has an ominous sound. Look at it this way: although the average male is about five feet eight inches tall, you surely would not think of saying that a man who measures only five feet has “low height”—*and therefore must be sick!* Similarly, although the average blood pressure of a group of young adult males is about 120, expressed in millimeters mercury systolic pressure, a certain percentage will have blood pressures of 100 or even 90. In most instances, they are perfectly healthy, and are just the low normals of the general population. In fact, individuals whose blood pressure tends to be somewhat below the average are apt to live longer than other people.

There are occasional individuals with low blood pressure who have symptoms such as dizziness or faintness, especially during change of position. These cases are very rare. Your doctor can prescribe treatment which will usually relieve these symptoms.

In other rare instances, low blood pressure may be associated with definite diseases such as Addison's disease and inadequate thyroid function. In these cases, the primary disease which causes the low blood pressure usually produces so many other symptoms that the disease is recognized even before the low blood pressure is observed.

Because the occasional case of lower-than-normal blood pressure which causes symptoms may be associated with some other illness, you should have a thorough medical checkup if your blood pressure is 90 to 100 or lower. But if your doctor concludes that your blood pressure is just low normal, consider yourself fortunate. Don't feel you have an abnormal blood pressure at all.

INFLUENZA

Because influenza, usually called “the flu,” often resembles a common cold, many people fail to take it seriously. This is a grave mistake.

because pneumonia may go hand in hand with influenza. During the epidemic of 1918, approximately 20,000,000 people lost their lives from this combination of diseases. This fact may make you feel that the flu is entitled to a place among the Killers, but I consider it a disabler because it is seldom the *direct* cause of death. Even though the fever and other symptoms may last only a few days, influenza is apt to leave people as weak and generally disabled as though they had gone through a long siege of illness.

Influenza is caused by a virus (see page 172). Its symptoms include fever, sore throat, cough, a runny nose, and a feeling of misery, chills, sweats, and aches, especially in the head, back, and legs. Like a cold, it is spread from one person to another, most commonly when a person in the early stages of the disease coughs or sneezes, spraying the virus into the air which other people breathe (see page 178). It is so contagious that health authorities are seldom able to prevent it from becoming an epidemic, once it appears in a community. Fortunately, these epidemics usually last no longer than a month.

PREVENTION

The following precautions will help you avoid catching influenza. Be sure to pay special attention to them when you know that there are flu cases in your community.

Get plenty of rest and avoid getting overtired or chilled.

Avoid crowds and any unnecessary contact with other people. Keep as far away as possible from those who do not smother their coughs and sneezes with a handkerchief or tissue. Be sure to make this a habit in your family.

Be especially careful about contact with anyone who is coming down with "the sniffles." Influenza is highly contagious during its early stages. Regard every cold as potential influenza. This is always a safe rule to follow as it is often difficult even for a doctor to distinguish between the two.

If someone in your household has the flu, keep him isolated from the other members of the family. His dishes, towels, etc., should be kept and washed separately, and rinsed in scalding water. Don't touch the cloths or tissues he uses as handkerchiefs. He should put them in a paper bag which can be burned or easily disposed of in some other way. Always wash your hands after touching anything with which he has come in contact. Purchase a gauze mask at the drug store, and wear it over your nose and mouth when you are in his room.

Do not count on being immune because you have recovered from an attack of influenza. It is true that temporary immunity does follow the

flu, but there are a number of different strains of the influenza virus, and having had one kind does not keep you from catching another. Similarly, vaccines give protection for some months, but only against certain influenza viruses. However, vaccination can be extremely helpful in preventing the flu during some epidemics. Be sure to ask your doctor about this.

TREATMENT

The best way to get well quickly and avoid dangerous or disabling complications is to give yourself all the possible odds in your fight against the virus. Go to bed if you have any symptoms of a cold or the flu, or even if you just do not feel well when there is influenza about. If it turns out to be nothing, think of your "wasted" day as insurance against catching the flu. If it's just a cold, be sure to follow very carefully the instructions I give on page 736. Don't overtreat yourself with nose drops, sprays, or antihistamines. If you have any aches and pains or a fever, call the doctor immediately. He will prescribe the medication you need. Although the sulfa drugs and antibiotics such as penicillin will not cure your flu, they are valuable in guarding against pneumonia and some other diseases for which influenza paves the way. Avoid visitors because they may carry in these germs.

Be sure to stay in bed as long as your doctor tells you to, even if your symptoms have disappeared. The fatigue may last several weeks. A great many of the complications of influenza develop because patients insist on deciding for themselves when they are able to be up and about. Influenza is a *serious infectious* disease. If you keep that in mind, you will be going a long way toward preventing it from doing any damage to you and to others.

THE ANEMIAS

Anemia comes from the words "without blood." Actually, it indicates that the red blood cells are below normal. These vital blood cells contain the pigment, hemoglobin, which carries oxygen from the lungs to the body tissues. In anemia, the hemoglobin is reduced, too. If you turn to page 112 you will learn more about the blood.

HOW TO RECOGNIZE ANEMIA

When the red blood cells and hemoglobin are greatly reduced in amount, the individual becomes pale. However, the skin may appear

pale or sallow in normal individuals. Anemia is best recognized by the pallor of (a) the palms of the hands, (b) the fingernails, (c) the inner parts of the eyelids, the conjunctivae. However, mild degrees of anemia are not detectable in this way. Your doctor has instruments for testing the blood for anemia. This is a part of any periodic medical checkup, or of a diagnostic examination.

SYMPTOMS OF ANEMIA

Mild degrees of anemia may cause only slight and vague symptoms as compared with a severe, disabling anemia. In mild anemia, there may be nothing more than a sensation of lack of pep, or of feeling not quite so energetic as one does under normal circumstances. There may be a tendency to greater fatigue. On the other hand, more severe anemia causes actual shortness of breath on exertion. This may be accompanied by pounding of the heart, or palpitation, and a rapid pulse and heart action, or tachycardia. In addition, there may be severe headaches, loss of appetite, dizziness, ringing in the ears, and even fainting spells. In very advanced cases of anemia, swelling of the ankles and other evidences of failure of the heart may appear.

THE VARIED CAUSES OF ANEMIA

There are many causes of anemia. I shall describe the most important ones completely enough for you to recognize them, and shall mention briefly most of the others, so that you will know the general methods of prevention.

Loss of blood. If there is a massive hemorrhage from a wound, the body may lose enough blood to cause severe anemia. This *acute type of anemia* is frequently accompanied by shock (see page 476). Immediate transfusions are generally required to replace the blood that has been lost.

Chronic blood loss also leads to anemia. The slow leakage of blood from an ulcer of the stomach may cause a severe anemia. This may be overlooked because the blood is mixed with the bowel movements. Hemorrhoids may cause loss of blood, and lead to anemia. Excessive menstrual flow may act in the same way. A cancer of the stomach or intestines may erode and cause sufficient bleeding to produce anemia.

These anemias will clear up when the cause has been found and corrected. Since iron is necessary to build hemoglobin, medicines containing iron are helpful in these cases and so are foods with a fairly high iron content, described on page 36. In addition to iron, hemoglobin

production requires protein, vitamin B₁₂, and other minerals and vitamins; therefore the diet for this type of anemia should be rich in these elements. (See Chapter 2, The Food You Eat.)

It has probably occurred to you that a *deficient diet* can cause anemia. If there is not adequate iron, protein, vitamins, and certain minerals such as copper and cobalt, the production of hemoglobin and the formation of red cells will be impaired. That is precisely what happens when people live on inadequate diets because of low incomes. It also occurs in individuals who can afford good diets but who insist on eating "coffee and doughnuts" because of the pressure of work, or who take up some diet fad.

The combination of a poor diet and chronic blood loss makes one particularly susceptible to severe anemia. For example, a child suffering from hookworm disease is likely to live in a low-income area, on an inadequate diet. In addition, the hookworm parasites produce leakage of blood from the intestine where they have attached themselves. The blood loss and the poor diet combine to cause the severe anemia for which the "hookworm belt" has been notorious (see page 430 on hookworm disease).

A periodic medical checkup to detect blood loss is a good precaution against anemia. So are the diets described on pages 25-26 which will give you sufficient iron and other important foodstuffs to keep your blood healthy. There is no need to supplement a good diet with medicines containing iron or other minerals or vitamins, the so-called "blood tonics," unless your doctor prescribes them.

PERNICIOUS ANEMIA

Pernicious anemia is a serious type of anemia which differs basically from the other types I have been describing. Until 1926 it was frequently a fatal disease. Then, with the discovery that liver contains a substance which greatly ameliorates pernicious anemia, the outlook of these patients was completely changed.

The individual with pernicious anemia has all the symptoms of anemia which I have described. In addition, there are specific symptoms caused by this variety of the disease. The skin is a pale yellow, lemon color. The tongue is sore and reddened. There may be difficulty in swallowing. There are changes in the nerves and spinal cord, which frequently produce the sensation of "pins and needles" in the fingers and toes. The gait may be unsteady.

The *diagnosis* of pernicious anemia is made by the doctor on the basis of physical examination, laboratory tests, and the response to treatment. The blood shows pathologic types of red cells. After liver or other specific

medicines have been given, the blood cells take on characteristic appearances during the period of improvement. Also, examination of the juice in the stomach shows that there is none of the usual acid secretion.

In some cases, the diagnosis of pernicious anemia is difficult to establish. *It must be made beyond any doubt because treatment will have to be continued for the rest of the patient's life!* Therefore, in occasional instances, the bone marrow must be examined. This requires a relatively simple operation in which some of the marrow is aspirated into a needle, or removed surgically. Usually, such a procedure is carried out by a specialist in diseases of the blood, a *hematologist*.

The reaction to *treatment* of pernicious anemia is quickly evident. When injections of liver extract or vitamin B₁₂ are given to patients with this severe anemia, there is dramatic improvement. The blood becomes normal again. The pallor, weakness, and shortness of breath disappear. Usually, the symptoms attributable to the nerves and spinal cord are improved, too. However, it must be remembered that these medicines cannot cure pernicious anemia. They merely replace some substance the body lacks to make normal red blood cells. Therefore, the treatments must be continued regularly. Otherwise, the anemia and the symptoms will return.

ANEMIAS CAUSED BY DESTRUCTION OF THE RED CELLS

Anemia can also be caused by the *destruction* of red blood cells. These are referred to as *hemolytic anemias*. Some of them are congenital in type. Others are acquired. Some are chronic, others acute. They differ from other anemias, too, in that jaundice may be present because the destroyed red cells release their hemoglobin, and it is converted into the jaundice pigments.

Hemolytic anemias may result from Rh incompatibility (page 333); from mismatched blood transfusions; from industrial poisons such as benzol, TNT, and aniline (see Chapter 8); and from sensitization to many chemicals and medicines, e.g., lead, sulfonamides, quinine, snake venoms, castor bean, or ricin poisoning, fava beans. Sometimes, a hemolytic anemia appears in the course of another disease, such as widespread cancer; leukemia; Hodgkin's disease; liver disease; infections caused by malarial parasites; bacterial septicemias.

Severe hemolytic anemias may lead quickly to a fatal end. Therefore, such patients must immediately be hospitalized so that transfusions can be given, and other treatment started. If the cause can be located, and if it can be removed successfully, there is a good chance of recovery.

In some types of hemolytic anemia, surgical removal of the spleen

causes great improvement. This is especially true in the congenital form of hemolytic anemia.

Sickle-cell anemia is a serious form of hemolytic anemia which appears almost entirely in Negroes. It is inherited as a familial disease. The malady receives its name from the fact that the patient's red blood cells may assume the bizarre shapes of sickles or oats.

ANEMIAS CAUSED BY IMPAIRMENT OF THE BONE MARROW

The red blood cells are manufactured chiefly in the red marrow of the long bones, the sternum, and the vertebrae. Any disease process that invades, destroys, or depresses the activity of the bone marrow can lead to anemia. For example, a tumor or cancer can invade the marrow spaces and crowd out the blood-producing marrow. The marrow can also be destroyed, or its activity depressed, by the following agents: exposure to radioactivity, for example, excessive x-ray, radium, or the materials and radiation released in the manufacture of, or explosion of, atomic weapons; certain hair dyes; medicines containing gold, arsenicals, or nitrogen mustard; certain types of insecticides; and industrial poisons such as benzene.

This bone-marrow illness is also called *aplastic anemia*. In aplastic anemia, the blood platelets and the white cells are also damaged. Therefore, in aplastic anemia, there will usually be other symptoms besides those of anemia. Bleeding from the nose, mouth, and "black and blue" spots occur frequently on the skin. Infections and fever may accompany the debilitation following aplastic anemia. It is a serious condition, and should be treated in a hospital with transfusions and other methods.

MISCELLANEOUS ANEMIAS

There are many anemias which arise in the course of other diseases. For example, in *chronic kidney disease* there is usually a severe and persistent anemia; in *hypothyroidism*, or myxedema, anemia may be persistent until thyroid medication is given; *sprue* may be accompanied by anemia; *intestinal parasites* cause various kinds of anemia; hookworm has been mentioned; *tapeworms* such as the huge, fish tapeworm may produce a severe form of anemia.

Mediterranean anemia is found in people living in the Mediterranean area, or in their descendants who have migrated to other countries. This inherited form of anemia is also called *Cooley's anemia* or *thalassemia*. It may be a severe, fatal disease in young children. In others, the disease is compatible with a long adult life.

ULCERATIVE COLITIS

Ulcerative colitis is sometimes confused with a milder, though troublesome, functional disease called *irritable colon* or *functional bowel distress*. This is also known as "colitis" or "*mucous colitis*." The words "colitis" and "*mucous colitis*" are misleading because of their resemblance to *ulcerative colitis*. I shall therefore use the expression *irritable colon* to describe the mild forms of functional illness of the large intestine.

Irritable colon is distinct and different from ulcerative colitis. It is a *functional* disorder, that is, there is nothing wrong with the large bowel or colon itself, but only with the way it acts. No organic disease can be found upon careful examination, including x-rays and other tests. When viewed through a *sigmoidoscope*, a metal tube used to examine the rectum and colon, the lining of the rectum and colon appears normal. X-rays, however, may reveal minor disturbances of *movement*, for example, spasm. People who have irritable colon almost never get ulcerative colitis. Since these diseases are quite different, it is particularly dangerous to follow the advice of some neighbor who has cured his or her "colitis."

Ulcerative colitis is a potentially serious disease which can be disabling. Its cause is still unknown.

SYMPTOMS AND DIAGNOSIS

The most common symptom of ulcerative colitis is severe diarrhea. There may be as many as fifteen or twenty watery bowel movements a day. Blood is frequently found in the stools. There is a feeling of weakness, and a loss of weight. In advanced cases, the patient may suffer from arthritis or pains in the joints, or skin disorders.

Careful medical examination and tests are required to diagnose this condition. These include x-rays of the large intestine after it is filled with barium, a metal which is employed as an enema in the form of a milky white liquid. The rectum is also examined with a proctoscope or sigmoidoscope through which the lining of the bowel can be seen. Marked redness and, sometimes, actual ulcers or sores are observed.

TREATMENT

Today, prompt medical treatment can prevent the disabling effects of this disease, which may otherwise make the lives of its victims miserable. The diarrhea can be so severe as to be completely incapacitating,

and emaciation can reach the degree where the patient's life is threatened. Sometimes, in the most advanced cases of ulcerative colitis, the only recourse is to perform one of several types of operation in which the ulcerated large intestine is placed at rest by making an artificial *anus* leading from the healthy intestine outside through the abdominal wall. Once this operation has been performed, the patient will usually have to continue using the artificial anal opening for the rest of his life. I feel that the decision to operate should be made only if a specialist in ulcerative colitis considers it absolutely necessary. Fortunately, this possibility can usually be avoided by early and proper treatment.

The cornerstones of this treatment are: rest and a bland, low-residue diet without fruits or vegetables, but with plenty of vitamins, minerals, and the other essential nutritional requirements. Medicines, including ACTH and cortisone, are helpful in treating certain cases of ulcerative colitis.

In many cases, this is sufficient to cure the disease. But the term *rest* means more than simply staying in bed. As in the case of peptic ulcers which I discuss on page 660, the discovery that mental or emotional factors play a part in ulcerative colitis has been an important development in successful treatment. Patients suffering from ulcerative colitis may be unable to relax and rest properly because of nervous tensions. In such cases, or in patients who fail to respond to treatment even though they are not aware of being tense, psychiatric help may be extremely valuable (see page 258).

ENLARGED PROSTATE GLAND

The medical names for this condition are *benign hypertrophy of the prostate* and *prostatism*. It is *not* a cancer.

To understand this condition, look at the illustration on page 710 and read the description of this organ, which provides much of the seminal fluid that carries the reproductive sperm. It is situated at the neck of the bladder, surrounding a part of the urethral canal through which the urine is excreted.

In about one of every three men over fifty years of age, the prostate gland becomes enlarged. It can happen earlier, but it is most common in the later years of life.

If the prostate becomes too large, it interferes with the normal passage of urine, by pressing against the opening of the urethral canal. The urine, unable to pass through freely, accumulates in the bladder. As the amount of urine in the bladder continues to increase, the pressure increases, forcing it to back up into the kidneys. This is serious, because

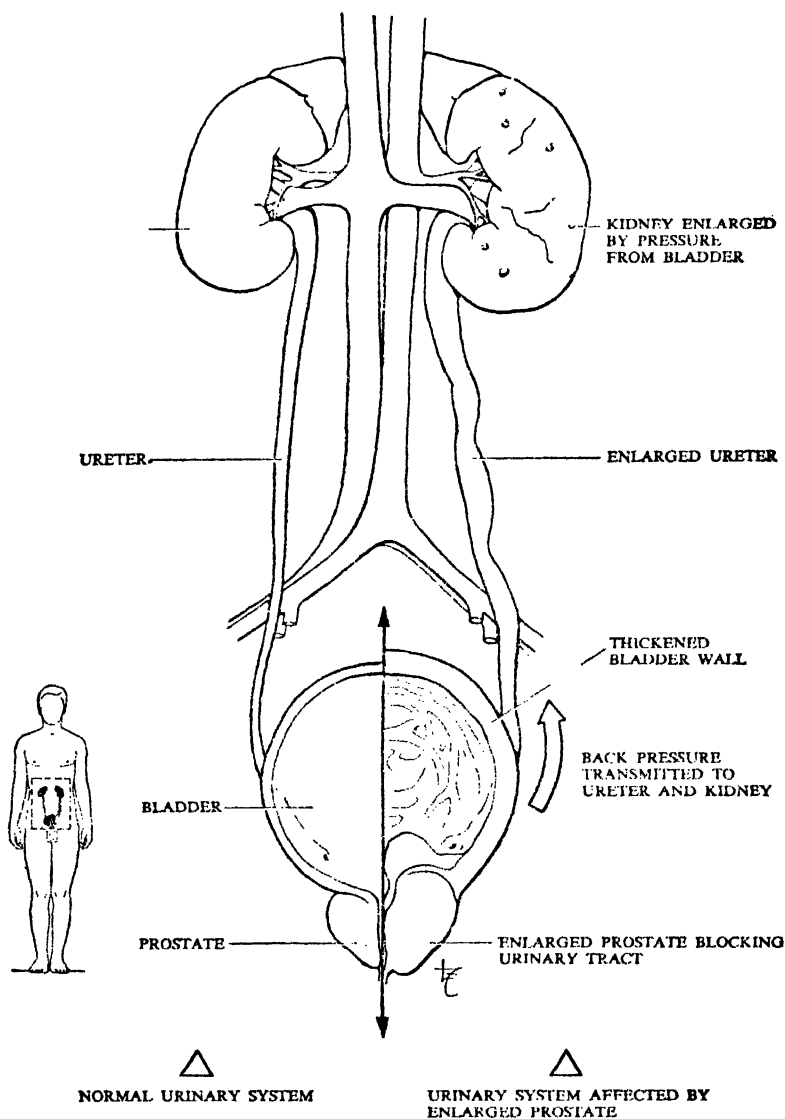


Illustration 34-6. ENLARGED PROSTATE.

the kidneys become damaged by the pressure. Furthermore, the accumulation of urine makes it easier for infections such as *acute* or *chronic prostatitis* to occur. Thus, an enlarged prostate can cause disability and even serious illness. No one should disregard its symptoms on the grounds that "it's no more than a nuisance."

SYMPTOMS

1. The need to get up several times during the night to pass urine, becoming more frequent as time goes by.
2. A decrease in the amount and the force of the stream of urine. Instead of being able to urinate to a distance of a few feet, the person with an enlarged prostate can only manage to dribble urine.
3. Difficulty in starting to pass urine.
4. The need to urinate almost immediately after passing urine. This is due to incomplete emptying of the bladder during urination.

DIAGNOSIS

In order to determine whether the prostate is enlarged, the doctor will make an examination by way of the rectum. Through the wall of the rectum he can feel the prostate gland and determine its shape and firmness. A physician who specializes in diseases of this type is called a *urologist*. It is most important to be examined immediately by a competent private physician or in a hospital clinic, to guard against possible complications due to an enlarged prostate, and to make certain that you do not have a cancer of the prostate. Although prostatism is *not* a cancer, *a cancer can cause the same symptoms*.

TREATMENT

The urine which has collected in the bladder may have to be removed by a rubber tube. This is called *catheterization*, and should be performed by a trained person. Existing infections may also require treatment.

If the prostate is sufficiently enlarged, an operation will be necessary. Advertised remedies and "doctors for men" cannot possibly "shrink enlarged prostate glands" and may actually cause the patient additional suffering and injury. Removing a part of the gland so that the bladder is no longer blocked is a *major* operation. But it is safe when performed by expert surgeons. *Even aged men withstand it very well*. They find they are more than repaid for it by increased health and the relief of their disabilities.

HERNIAS

Hernia is the medical term for a rupture. The word rupture is not accurate, since it means tear, and nothing is actually torn. What usu-

ally happens is that a weak spot develops in the bands of muscle tissue in the abdominal wall, and the intestines begin to bulge through this, forming a soft lump. When the patient lies down, the intestines slide back to their proper place, and the bulge usually disappears entirely, especially if the hernia is of fairly recent origin.

There are various types of hernias. They occur in men more frequently than in women. They may also occur in children.

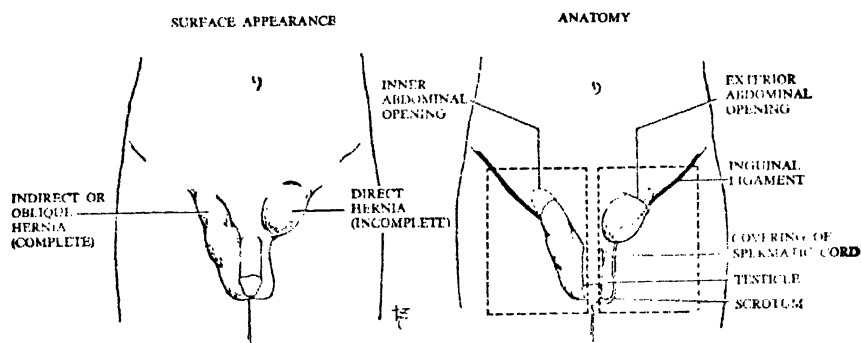


Illustration 34-7. INGUINAL HERNIAS.

The left side of this figure shows an indirect hernia which protrudes through the inner abdominal opening, and traverses to the scrotum inside the covering of the spermatic cord. The right side shows a direct hernia which comes through the abdominal wall at its external opening. It may pass directly into the scrotum, and thus become complete.

The most common type is the *inguinal hernia*, which occurs in the groins of males. The weakest spot in the male's abdominal wall is located in the groin. It is here that the cord leading to the testicles passes. Unfortunately, in some male infants the wall fails to shut tightly around the cord at this spot, leaving it especially weak. In later years, a strain such as that caused by lifting a heavy object may cause the wall to give way suddenly, or constant straining may force it out gradually. The intestines begin to bulge out. At first, this may be hardly noticeable, and there may be little pain. As time passes, the bulge may become as large or larger than a hen's egg. Hernias may extend downward into the scrotum, the bag of skin containing the testicles.

Hernias in women are most frequently located on the upper thigh, just below the groin. This is called a *femoral hernia*.

In *umbilical hernia*, the navel protrudes. This type is unusual in adults. It discusses umbilical hernia in children on page 360.

Among the other types of hernias are those which follow operations in which the scar does not heal properly, permitting bulging to occur.

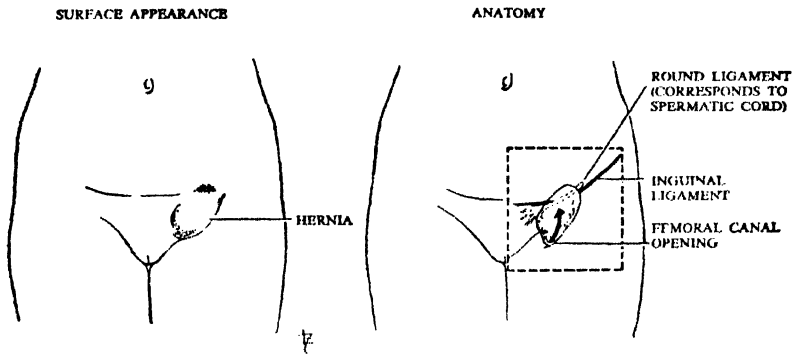


Illustration 34-8. FEMORAL HERNIA.

Insert shows the hernia passing through the canal and sliding up and over the inguinal ligament.

Hernias may be aggravated by coughing, sneezing, or, especially in constipated individuals, straining to pass bowel movements.

Anyone with a hernia should see a doctor without delay. One reason for this is that "strangulation" may develop. When this happens, a loop of intestine becomes caught in the bulge, and its blood supply is cut off. This results in gangrene of the strangulated loop of bowel, a condition which is as serious as a ruptured appendix (see page 655). It can cause death. If you have an untreated hernia which suddenly becomes painful, see your doctor *immediately*, or go at once to the emergency room of a good general hospital. This is an *emergency* which calls for quick medical help.

In addition to the constant danger that a hernia may become strangulated, the inconvenience and disability, as well as the unsightliness, of a hernia warrants medical attention.

TREATMENT

The best treatment for hernia is an operation to repair the weakness in the muscles responsible for it. This operation is usually minor, and quite safe. Even elderly people undergo it without difficulty. No one with a hernia should avoid or delay the operation if it has been recommended. With the modern advances in surgery, almost no reason exists for using a truss or other support. Trusses are inconvenient, frequently uncomfortable, and may add to the injury by enlarging the weak spot. Even a well-fitted truss does not avert the danger of a strangulated hernia. The hernia may continue to grow until the truss can no longer hold it in.

Medical opinion today is opposed to the use of trusses except in unusual circumstances. Furthermore, treatment by injections is not recommended by modern authorities. Apart from small babies, on whom an operation is usually postponed temporarily, the best thing to do is to have the hernia corrected by surgery immediately.

PREVENTION OF HERNIA

1. Get used to doing heavy work gradually, so that your muscles become adjusted to the increased strain.
2. When lifting heavy weights, face the object, keep your feet close to it, and spread them about twelve inches apart. When lifting from the floor, keep your knees bent, and rise slowly, using leg rather than back muscles.
3. As much as possible, carry loads on your shoulder rather than on the hips.
4. Don't reach too high for heavy packages.
5. Always try to have someone help you with unusually heavy lifting.
6. If you work in a factory, use mechanical devices, such as conveyor belts, elevators, and hoists whenever you can.

INFECTIOUS MONONUCLEOSIS

Infectious mononucleosis, sometimes called *glandular fever*, belongs in this section because it can cause a degree of disability surprisingly prolonged for what may seem to be a mild illness. It is now recognized that infectious mononucleosis frequently damages the liver. Because of this potentially serious complication, medical care and adequate rest are essential in order to prevent possible permanent damage to this vital organ.

This is particularly true because infectious mononucleosis affects young adults chiefly, and young people are often impatient when it comes to taking sufficient rest. They insist they are well, and as a result invite relapses and consequent complications.

This disease appears to be caused by a virus. It frequently affects college students, soldiers, nurses, and other young people who live in groups. The symptoms are: fever, sore throat, swelling of the glands of the neck, and weakness and fatigue. There may be skin rashes. Jaundice (see page 645) will occur if the liver has been sufficiently involved.

Usually the disease clears up in a few weeks, but may leave the patient weak and easily tired for months thereafter.

GONORRHEA

Gonorrhea is the most widespread venereal disease in the United States. It is not as dreaded as syphilis because it is not one of the "great Killers." However, the old saying that gonorrhea is "no worse than a bad cold" is a dangerous falsehood. *Gonorrhea can become extremely serious.* It causes pain as well as discomfort. Far more important, it is a frequent cause of sterility in men as well as in women, and of many disorders of the reproductive system.

If the germs get into the eyes, blindness can result. Most states now require doctors to place a disinfectant in the eyes of newborn babies. This has practically eliminated blindness due to infection during passage through the birth canal of a gonorrheal mother.

The disease can also lead to painful arthritis and destruction of the joints. It can even cause death if the germs enter the blood and lodge in the heart valves.

Gonorrhea is an infection caused by the germ *Neisseria gonorrhoeae*, also called the *gonococcus*, which attacks the sex organs of men and women. It is known by many slang terms including "clap," "dose," "gleet," and "strain." It is almost always contracted by sexual intercourse, *not* by kissing or sitting on toilet seats, except in the case of infections of the eye in children or adults, and vaginal infections in little girls. It is important to realize that little girls can easily be infected with gonorrhea from towels, diapers, and other objects contaminated with the germs of this disease.

SYMPTOMS AND DIAGNOSIS

The first symptoms of gonorrhea usually appear from five to seven days after the sexual exposure. In men there is a whitish discharge from the penis and/or a burning sensation upon urination. Women may develop pain in the lower abdomen with or without a period of burning urination and or a whitish vaginal discharge. Never disregard any symptoms of gonorrhea.

Because germs other than those causing gonorrhea may cause these symptoms (see page 770), it is necessary that the diagnosis be made on the basis of microscopic examinations performed by a reputable doctor, a hospital clinic, or a venereal disease detection center. Although gonorrhea is a disease entirely separate from syphilis, and is caused by a different germ, it is not unusual to contract both gonorrhea and syphilis at the same time. This is another important reason for having the

diagnosis made by a competent person. The tests for gonorrhea are easily performed, and no one should feel ashamed to have them made.

TREATMENT

Gonorrhea can be cured effectively and with comparative speed. However, this requires a competent physician. Avoid quacks, "men's doctors," doctors who advertise, and home remedies. They can be dangerous as well as costly. Many people have been victimized by so-called "experts" who "treated" them even though they actually never had gonorrhea.

Sulfa drugs, penicillin, and other antibiotics are effective in curing gonorrhea. They can be dangerous unless administered by a physician. If, for example, someone contracts syphilis and gonorrhea at the same time, the symptoms of gonorrhea will appear first. The amount of penicillin required to cure gonorrhea will *suppress* the signs of syphilis without curing that disease. In addition, only a competent doctor will know when the disease is cured and treatment can be discontinued. It is foolhardy to discontinue treatment, even though the symptoms disappear, before tests prove that the disease is no longer present.

Having an attack of gonorrhea does *not* produce an immunity to the disease. Having been cured once does not protect an individual against later infections.

PREVENTION

Although it is now possible to cure gonorrhea, prevention is still the best and safest method of coping with it. Follow the directions for the prevention of syphilis which I give on page 653. In brief, these are: (1) Avoiding intercourse with an infected person; (2) Using a rubber condom and a thorough washing afterward. This is an excellent safeguard, because it is often impossible to tell whether or not a person is infected with gonorrhea or some other venereal disease.

OTHER VENEREAL DISEASES

In addition to syphilis (page 650) and gonorrhea, there are three other less common types of venereal disease: *chancroid*, *lymphogranuloma venereum*, and *granuloma inguinale*. For these diseases also, we emphasize careful preventive measures. Use a condom and the soap and water wash. Symptoms of these diseases are sores on the genital organs, swellings or lumps in the groin, or sores around the groin and the anal region. If any such symptoms appear, see your doctor quickly.

BRUCELLOSIS (Undulant Fever)

There are several forms of undulant fever, an infectious disease which is known by various names. The word *undulant* indicates that the fever comes in waves, or undulations, instead of being constant. One form was formerly called *Malta fever* because it was prevalent in some of the Mediterranean Islands. More recently, all forms of the disease have been given the name *brucellosis* because they are all due to infections with some member of the germ family called *Brucella* after Dr. David Bruce, who discovered them.

SYMPTOMS AND DIAGNOSIS

The symptoms of brucellosis usually come on slowly, and are rather indelinite, consisting of an irregular fever, chills, sweating, and aches and pains in the joints and muscles. The death rate is not very high. However, it is rare for a patient to recover after only one attack of the illness. As a rule, another attack follows the first after an interval, and this may be repeated almost indefinitely. You can see how much disability, suffering, and economic loss such a disease can cause.

It is much easier to diagnose brucellosis when it is in its acute form than in its chronic stage. The physician tries to find the causative bacteria in the blood, urine, bile, or stools. Other laboratory tests may prove helpful. In the chronic stage, it may be difficult to find the bacteria. The diagnosis must depend on skin tests and other less absolute indications. The response to treatment may give a clue. But do not be surprised if your doctor says he cannot make a 100 per cent diagnosis of undulant fever in its mild, chronic stages. All too frequently, this diagnosis has become a medical catch-all for vague symptoms of fatigue, slight fever, and joint aches. Usually, if you give your doctor sufficient time and the opportunity to call in a consultant who specializes in internal medicine, the diagnosis of brucellosis can be made even in the mild cases.

TRANSMISSION

Brucellosis is very rarely carried from one person to another. It is, however, constantly carried from animal to animal, and from animal to person. The animals which harbor the germ are chiefly domesticated goats, cattle, and hogs. Each species of animal has a particular kind of *Brucella* germ which is characteristic. People who drink raw, infected goat's milk are likely to get the goat variety, the original Malta fever.

Those who drink raw, infected cow's milk are apt to contract the *abortus* variety. This form gets its name from the fact that cows infected with it give birth to premature calves. It is responsible for great losses in the cattle industry. Infection with the hog variety, *B. suis*, produces a relatively severe disease in man, and this type of infection is becoming more prevalent.

This disease is acquired in two ways: (1) By drinking milk or milk products from diseased animals. Pasteurizing the milk effectually prevents this danger. (2) By contact with diseased animals or their carcasses. Farmers, veterinarians, slaughterhouse employees, and butchers are exposed to this form of infection, as well as housewives who handle infected meat in the kitchen.

PREVENTION

The best way to prevent brucellosis is to eradicate the disease in animals. The excellent efforts being made along this line will undoubtedly be successful in the long run. *But in the meantime other preventive measures must be taken*, because it is practically impossible to be sure at any given time that a herd of animals is free from the bacillus. The danger of brucellosis is a powerful argument for universal pasteurization of public milk supplies (see page 179 for "home pasteurization" of milk). Infection by contact with diseased animals or their carcasses is less easy to prevent, and is essentially a matter of industrial hygiene (see page 197). Persons who are exposed to brucellosis in their jobs should be fully informed of the dangers, and should take precautions against unnecessary exposures.

TREATMENT

Before the antibiotic era, the treatment of undulant fever was very unsatisfactory. Now, several of the antibiotics alone, or in combination with sulfonamides, are extremely helpful in treatment. They are more effective in the early, acute stages than in the chronic. However, there is every hope that some antibiotic will prove therapeutic in every stage of brucellosis.

LEPROSY (Hansen's Disease)

You may be surprised to see leprosy included among the disabling diseases when, for centuries, people have feared leprosy as a horrible

killer. The very word "leper" has caused terror to men throughout the ages. Following World War II and the Korean war, there have been many anxious inquiries about this disease from the families and friends of servicemen who were in Asia.

Their anxiety is unnecessary. In the first place, there is no truth whatever in the ancient belief that leprosy can be contracted by touching an infected person or some object he has handled, or simply by passing him in the street. Leprosy is one of the *least* contagious of the infectious diseases. By taking ordinary precautions, doctors and nurses have worked for years among leprosy patients without getting the disease. It is contracted by *prolonged, close* contact with a person who has an *active* case of certain types of leprosy. With modern treatment, most cases of leprosy can be controlled or even arrested.

In the average case, it is not a particularly severe disease. Nevertheless, it is a disabler. Although it is actually quite rare in this country, I include it because the *psychological* disability it causes can be as serious as the physical. In this way, it affects not only the patient and those who have been in contact with him, but many others who only imagine they have been exposed.

Leprosy is caused by *Hansen's bacillus*, also called *Mycobacterium leprae*. It generally attacks the skin and nerves. It does *not* affect the brain. It is *not* inherited. There are several types of leprosy, one of which often arrests itself even without treatment.

SYMPTOMS AND TREATMENT

The most common symptoms include the typical leprosy patches on the skin, small nodules on the face and legs, and a loss of feeling in limited areas of the body, such as the fingers. The disease develops slowly and is difficult to recognize. There are specific tests doctors employ to diagnose leprosy.

Treatment with certain medicines effectively halts the progress of the disease, and relieves its symptoms. Although certain patients can be treated at home, they usually do best at the U.S. Public Health Service Hospital (National Leprosarium), Carville, Louisiana. Here, specialists in the disease provide expert treatment, restful sanatorium care, and an understanding of the disease, along with freedom from worry about spreading the infection. There is no charge for treatment. Patients can have visitors and, when their condition permits, that is, when they are no longer capable of spreading bacteria, they can visit or return to their families. Psychiatric help (see page 258) is extremely valuable for patients and their close contacts.

TROPICAL DISEASES

Millions upon millions of people, especially in Asia, the Indonesian islands, Africa, and parts of southern Europe, are completely or partly disabled by the so-called tropical diseases. Of these, malaria is the most important, until recently infecting as many as 300,000,000 people throughout the world. I describe malaria fully below, as it is prevalent, to some extent, in this country.

I should like to add a few notes about other tropical diseases because of the many Americans who have been or are at present overseas in the armed services or civilian jobs, and because of the increased airplane travel which brings the tropics, and their diseases, to our door. Men in the armed forces are protected from these diseases by vaccinations, medicines, and the vigilance of their health officers. But civilians are frequently careless or uninformed. If you are going to a tropical or semitropical country for a visit, a vacation, or a job, be sure to ask your doctor about the health hazards you may face, and follow his instructions exactly. The U. S. Public Health Service, Washington 25, D. C., and the American Embassies and Consulates in the foreign countries will also provide information. As an example: many people do not realize that smallpox is a real danger in countries as near to us as Mexico. Anyone going there should be revaccinated to protect himself against smallpox and to facilitate re-entry into this country. Due to poor sanitation in many tropical countries, there is a great danger from intestinal diseases. Some of these, such as *amebic dysentery*, can be extremely disabling. Other types of intestinal diseases, e.g., *bacillary dysentery*, *typhoid fever*, and even the dreaded killer, *cholera*, are prevalent in many tropical countries. It seems to me that travelers to distant lands frequently get excited about the exotic diseases such as *schistosomiasis*, *tsutsugamushi fever*, *filariasis*, and *leishmaniasis*, and forget that the chief sources of danger are eating and drinking infected foods and water which cause intestinal diseases. Simple precautions which I outline on page 179 will prevent most of the so-called tropical illnesses.

If you plan to visit certain parts of Africa, you should ascertain in advance the possibilities of infection from *African sleeping sickness*, or *trypanosomiasis*, and *yellow fever*, and learn the precautions against these diseases.

Travelers and new residents often fail to realize that there is a tremendous amount of tuberculosis in most tropical countries. It is extremely important to see that the household and school contacts, especially of children, are checked for tuberculosis, and to follow the other precautions I give in Chapters 7 and 8.

Remember, too, that maids and other domestic workers coming from

tropical countries may bring diseases with them. This is another reason for a careful medical checkup of all intimate contacts in your home.

MALARIA

Malaria is still one of the most prevalent diseases in the world, especially in Asia, Africa, and parts of Europe. The number of malaria patients in the southern U.S.A. was estimated in 1935 at several hundred thousands. Now the figure has dropped phenomenally. And in the rest of the world, there is a marked decrease due to improved preventive and therapeutic measures.

Malaria does not kill very frequently, but it is disabling because of its high fever and severe chills, and its long duration.

CAUSE AND SYMPTOMS OF MALARIA

The disease is caused by a parasite so small that it can live and reproduce in the tiny red blood corpuscles. This parasite is carried from a patient with malaria by the intermediary action of the female *Anopheles* mosquito. While feeding on such a patient, the mosquito sucks up infected blood. It transmits the infection to healthy human beings on whom it subsequently feeds. About two weeks later the person infected will develop characteristic symptoms. These are chills and shaking, and a high fever which subsides in several hours, leaving the patient drenched in sweat, exhausted, and very sleepy. The types of malaria are named according to the interval between the fevers, e.g., tertian, every third day; quartan, every fourth day.

If the disease is not treated, the chills and fever may continue for months before the body overcomes the acute stages. Even then, malarial symptoms can recur if the patient's resistance is lowered by strenuous activity, alcoholic excesses, or exposure to cold. Patients chronically ill with malaria suffer from anemia, headaches, muscle pains, and general poor health.

Diagnosis is made by the doctor when he examines a drop of blood under the microscope. The malarial parasites are generally abundant and easily recognized.

TREATMENT

For many years, quinine was the standard treatment. It was not a real cure, but it suppressed the symptoms and kept the parasites out of the blood. Since World War II, when the Japanese cut off the supply of

quinine to the U.S.A., there has been intensive research to find new and better compounds for treatment. The search has been rewarded. Doctors now have medicines that can cure this disease. These medicines include chloroquine, pentaquine, primaquine, and quinacrine (Atabrine).

PREVENTION

There is no successful vaccination against malaria. Therefore the problem of prevention consists of (1) destroying mosquitoes, especially at their breeding spots, (2) preventing the actual bite, and (3) killing the parasites that enter the body. The keynote is: *No Anopheles mosquitoes, no malaria.*

(1) Mosquitoes can be destroyed by filling in pools, swamps, and all stagnant water, or by intensive use of DDT and other insecticides. DDT sprays used in the home and in barns on farms will kill mosquitoes. (2) Screens of mosquito netting around beds and baby cribs help prevent mosquito bites. (3) Soldiers and others who are unable to protect themselves by the above measures can take antimalarial medicines regularly by mouth to kill or weaken the parasites when they enter the body through the mosquito bites.

If you live in a malarious area, consult both your doctor and the county health officer. They will advise you on the best preventive measures for your home or farm.

AMEBIASIS

Amebiasis, caused by a parasite which invades the intestines, was formerly regarded as a purely tropical disease. However, we now know that a considerable number of cases of even the severe form, *amebic dysentery*, are found throughout the United States. It is widespread in its mild form. From 5 to 10 per cent of the people in this country may harbor the parasitic ameba in their intestines.

I describe parasites and explain how they are taken into the body in Chapter 7, *Keeping the Germs Away*, page 179. I also tell you how to prevent infection from these organisms by taking proper sanitary precautions with respect to food and water.

However, it is not safe to assume you cannot get amebiasis if you follow these precautions, for the disease can be passed to you by someone who handles food and who may not know he or she is harboring the

invisible cysts of this parasite. This can happen because individuals with the mild variety may experience only minor symptoms such as headache, occasional nausea, flatulence, fatigue, and bowel irregularity.

It is most important not to neglect any symptoms of amebiasis. You are very apt to give the disease to someone, perhaps a child, who may develop it in its severe form. In addition, mild cases may develop into amebic dysentery, with abdominal pain and diarrhea, often accompanied by bloodstreaked stools, and, in severe cases, chills and fever. Severe amebic dysentery can cause death. There is also the risk that the parasite may travel to the liver and produce an abscess there. If not treated properly, such an abscess can prove fatal. Finally, even mild amebiasis can make one miserable, run-down, and unable to resist other diseases.

Only a physician can diagnose amebiasis in either its mild or severe form. The patient's stools must be examined under a microscope. Several specimens usually have to be examined because the organism may not always be present. A blood test has also been developed to help in making the diagnosis.

Amebiasis can usually be treated with success. New medicines have been developed for all types of this disease. Even people who have had chronic, resistant cases should not be discouraged, but should again consult their doctors, as they can probably benefit from the new treatments.

A WORD OF WARNING

Amebiasis can be extremely disabling, so don't decide for yourself that your loss of weight, sallow skin, swollen abdomen, or any of the other symptoms I listed above are due to "indigestion." Above all, do not treat it with cathartics or other medicines. You may have only mild symptoms for as long as several years before coming down with a severe case of amebic dysentery.

Remember, too, that prevention is a community as well as a personal matter. Be sure that your community as well as your own family takes proper steps in guarding the purity of water and food.

If you visit or live in an area where the sanitation is poor, be sure to read page 180. Also, consult your doctor in advance about special precautions that may be necessary where you are visiting. For example, if it is impossible to boil your drinking water, he may give you tablets you can put into it, to kill the cysts of the ameba through which this disease is transmitted.

SARCOIDOSIS (Boeck's Sarcoid)

Sarcoidosis is a long illness which can be considerably disabling at times. Fortunately, despite its chronicity, it usually heals eventually. The disease is more severe in dark-skinned races than the white. In the U.S. more cases are found in the southeastern rural areas than elsewhere.

In this disease, little fleshy lumps invade the tissues. Most frequently the lungs, skin, and lymph nodes are affected. However, it has been known to occur in almost every part of the body, including the eyes, liver, and bones. Because the disease so frequently affects the lungs, it has been confused with tuberculosis. However, sarcoidosis is not communicable. The patient may live with his family.

In mild forms, there are few if any symptoms. In severer forms, there may be fever, loss of weight, cough, and other distressing symptoms. In some forms of the illness, it is possible to relieve the symptoms by the use of cortisone and ACTH.

CHAPTER 35

The Nuisance Ailments

I wish we had a complete list of all the illnesses that afflict our population. Strange to say, no complete enumeration of diseases is available. It is true that we have a good idea about the *Killer diseases* because they appear on the death statistics. And there has been some approximation of the *Disablers*, based on the extremely valuable information obtained in the door-to-door canvas of American homes by the United States Public Health Service in 1935. However, the census has not been repeated since that time. And there has never been an accurate account of the minor ailments that do not ordinarily disable or kill, but may cause days and even years of pain, discomfort, worry, or shame. It is my guess that, were we to obtain such a census, we would be amazed to discover how many *person-hours of suffering* are caused by diseases which few medical scientists consider worthy of investigating. For example, one of the most neglected areas of medical research is skin disease: yet the hours of distress caused by *psoriasis* alone must run into millions each year for our population. And, besides the actual discomfort, there is the emotional suffering so many of these patients endure.

In this chapter I shall discuss a number of the so-called minor illnesses. Only rarely do they actually disable people. Only very exceptionally do they lead to death. But, in my experience as a doctor, I have found that a tremendous amount of pain and emotional grief is caused by these conditions—most of it unnecessary. That is the saddest part of it! Almost all of these conditions are either completely curable or can be greatly improved by medical or surgical help. All too often people with headaches, sore feet, varicose veins, hemorrhoids (piles), constipation, and so on, suffer stoically for years because they feel that their doctors or the hospital clinics don't want to "bother about such little things." I've often heard a patient with—for example—varicose veins, say in an apologetic manner, "These veins of mine aren't causing me any great trouble, Doctor, and I really shouldn't take your time simply because I don't like the way they look."

Believe me when I say that any doctor worthy of his M.D. is extremely interested in correcting or relieving these *Nuisance ailments*. In the first

place, doctors know that appearances affect people's happiness, health, and ability to earn a living. Doctors want them to seek expert advice about anything they consider unsightly—and not try to hide it, when it can be cured, or to experiment with unscientific, often dangerous “cures” or “aids.” In the second place, doctors know that the nuisance ailments almost never limit themselves to marring the appearance. They may interfere with sleep, spoil appetites, pave the way for local or general infections; in short, they prevent people from enjoying good health and the positive feeling of well-being that goes with it.

I know that many people suffering from the Nuisance ailments have forgotten what it is like to feel *really* well. If you're one of them, this chapter is written especially for you. In it I discuss some of the most common of the minor causes of distress. All of them can be helped, and many can be completely cured.

You will notice that I discuss only a comparatively small number of the “nuisances” in this chapter. That is because I have dealt with many of them in other chapters—for example, in discussing the Care of Teeth and Gums (Chapter 4), Problems of Women (Chapter 36), The Later Years (Chapter 37) and so on. Here is a list for your convenience in locating the Nuisances I discuss elsewhere.

TEETH, GUMS, MOUTH

Unless you belong to the very lucky and very small minority in this country, you have undoubtedly been bothered by:

	Page
Toothache	485
Dental Decay	73
Pyorrhea	78
False Teeth	80
Halitosis	80

SKIN CONDITIONS

These are among the most annoying, both from the point of view of appearance and discomfort, of all nuisances.

	Page
Acne	154
Growths	160

Facial and Body Hair	150
Infections	158
Athlete's Foot	147
Freckles	152
Wrinkles and Other Signs of Aging	799
Perspiration and Body Odor	153

THE HAIR

Actually, disorders of the hair cause less discomfort than they do worry about unsightliness. But they certainly take a lot of our time and energy!

	Page
Scalp Diseases	168 and 431
Dandruff	164
Baldness	167
Gray Hair, Dyeing, Permanent Waves	165

POSTURE AND WEIGHT

Many of our everyday pains and aches are due to poor posture, which is frequently associated with being overweight. Both these conditions can cause a great deal of distress because of their effect on the general health and appearance.

	Page
Overweight and Underweight	41
Food Fads	37
Foot Strain	143
Posture	8
The Middle-aged Spread in Women	12

EMOTIONAL PROBLEMS

I have written a whole section of this book, entitled *You and Your Mind*, in order to help you to understand minor, as well as major, emotional difficulties. I have also discussed them in such chapters as *Emotional Attitudes toward Marriage*, *Our Children's Emotions*, and *Adolescence*. Some of the most frequently encountered "minor emotional Nuisances" are:

	Page
Character Disturbances	246
Everyday "Blues"	785
Sexual Problems	292
Health Phobias	808

WOMEN'S PROBLEMS

Doctors no longer assume that a certain amount of pain and discomfort is "the price a woman must pay for being a woman." Nor do they feel that it is foolish for a woman to want to keep up her appearance as well as her health.

	Page
Menstrual Disorders	762
Menopausal Difficulties	766
Disorders of the Genital Organs	770
Difficulties Following Childbirth	773
Bust Development	777
Housework Problems	779

"INDIGESTION"

You notice I put this word in quotation marks. That is because I want to do everything I can to remind you that it is not a disease in itself, but a symptom of many diseases. However, there is such a thing as a *minor digestive disturbance*, which I describe on page 121.

By now you're probably wondering what nuisance ailments are left for me to discuss in this chapter. Unfortunately, there are a great many! Here they are:

- Headaches
- Insomnia
- Colds
- Sinusitis, Dry Throat, Cough, etc.
- Allergies (Including Hay Fever and Eczema)
- Constipation
- Psoriasis

Disfigurements (Including Crossed Eyes, Harelip, Unsightly Nose and Ears)
 Rectal Troubles (Including Hemorrhoids [Piles], Fissures, and Pruritus Ani)
 Varicose Veins
 Seasickness (Motion Sickness)
 Pilonidal Sinus

HEADACHES

I have given considerable thought to whether or not headaches constitute a Nuisance disease or a Disabling disease. It is true that migraine headaches—and even tension headaches—may become severe enough temporarily to disable their victims. However, because headaches rarely disable for prolonged periods of time, I am placing them in the nuisance category. I am sure that most of my readers would refer to the two common types, *tension* and *migraine* headaches, as “confounded nuisances,” rather than Disablers.

You can be helped with headaches. First, a word about their prevalence. It is believed that almost every adult has experienced a headache, and that one in ten has headaches sufficiently frequently or severely to find them a source of genuine discomfort. Another index is the millions of dollars spent each year on aspirin, Bufferin, Empirin, etc., which are used chiefly for relief of headaches.

I am sure I need not describe the symptoms of a headache, since it is exactly what the word implies, although the ache or pain varies considerably in type and intensity. However, I want to stress the point that in *many instances headache is a symptom of some disease*.

HEADACHES AS A SYMPTOM

The eyes—for example, defective vision or eye strain—frequently cause headaches. If your eyes are red and watery and the pain is located in the forehead, you may realize why your head is aching. But countless people suffer needlessly without suspecting that eyeglasses, good lighting, or correcting poor habits of reading, viewing television, and so on, would bring prompt relief. Be sure to read the section in which I discuss care of the eyes (page 131).

Headaches may be due to *sinusitis* (see page 738) in which the membranes of the nose swell and block the sinuses, causing pressure. This makes the head throb painfully, especially on bending forward. *Colds*, *hay fever*, and *other allergies* can have the same effect.

Headache is an early symptom of many *infectious diseases*, from

polio, meningitis, and measles to the flu. In such cases it is usually accompanied by other symptoms such as fever and a general feeling of sickness.

In a serious, though uncommon disease—*brain tumor*—headaches may be repeated and grow increasingly painful, accompanied by blurring of the vision and vomiting.

High blood pressure can cause headaches, although this is not nearly so common as most people believe.

Of course, *head injuries* and injuries to other portions of the body such as the neck, cause headaches.

I discuss *menstrual* and *menopausal headaches* on pages 765 and 770.

Anemia, disorders of the intestinal tract—in fact, almost any disease I could name—can be accompanied by headaches. So can hunger, cold, lack of sleep, overexertion, too much drinking, or smoking.

The headaches which some people associate with constipation are actually due to a nervous reaction.

Naturally you don't want to visit the doctor for every headache. However, *I strongly urge you to go if:*

1. The headache does not vanish when the condition you believe has caused it is corrected or relieved—for example, if getting sufficient rest doesn't stop a headache you thought was due to fatigue.

2. The headache is accompanied by any other symptoms, such as fever, nausea, vomiting, visual difficulties, and so on.

3. The headaches occur often, are severe, or seem to be increasing in intensity, duration, or frequency.

Your headaches may be a symptom of some difficulty that can be corrected, or a disease which should be promptly treated. They may not be, but if they fall into any of the three groups I just mentioned, only a doctor can decide.

If your headache is not of this kind, it will probably be a *migraine headache* or a *tension headache*—the latter being more common.

MIGRAINE HEADACHES

This is also called a "sick headache." Its cause is unknown. However, it appears to be connected with the psychological makeup of the individual, since it is found most often in certain personality types, and an attack is apt to follow an emotional disturbance. In women, it often coincides with the menses. There is a family tendency toward migraine. Some of the rarer kinds of migraine headaches have been diagnosed when, for example, the doctor learned that close relatives of the patient had headaches following attacks of flickering vision. Therefore, it is

important to tell your doctor about relatives who suffer from this disease.

Symptoms of migraine are so varied that diagnosis can often be made only by a skilled and experienced physician, such as a specialist in neurology. A typical attack starts with changes in the field of vision—a flickering before the eyes, flashes of light, or a blacking out of part of the vision. Migraine headaches are almost always one-sided, either in the right or the left part of the head, and scarcely ever involve the entire head. They are frequently accompanied by nausea and vomiting. They are seldom relieved by aspirin. However, the symptoms vary in less typical cases of migraine.

Although aspirin is not usually helpful, a number of medicines are used successfully. One of these is *Ergotrate* (or *ergonovine*) which, if taken regularly, may prevent attacks. *Gynergen* or *ergotamine tartrate* may ward off an attack if taken promptly enough on appearance of the first warning signals—for example, the flickering or flashing of lights that often precedes migraine. These medicines must *never* be taken without a doctor's prescription.

Migraine headaches should always be treated by a physician. Your doctor will help uncover the factors which precipitate the attacks, e.g., fatigue and overwork, or specific worry about job or personal life. Doctors sometimes find that, in addition to medicines, the migraine patient requires some form of psychotherapy to modify the tense personality that predisposes to the migraine attacks (see page 251).

TENSION HEADACHES

This is the name we use for ordinary or common headaches. These headaches, for which no disease or other physical cause can be found, have recently been studied in headache clinics and similar research projects. One group of doctors studying over 500 patients who suffered from chronic headaches discovered that the "ordinary" variety responded rapidly to a *placebo* (an inactive substance such as sugar) which was described to the patients as a new headache cure. This does not mean that the patients were not actually suffering. They were. But it does indicate the psychological origin of their headaches.

Whether the tension causing headaches is due to our modern society or to the emotions of the individual—or both—the result is the same. The victim is confronted with two choices: either to seek a means of relieving the tensions, or of relieving the headache pain. If the headaches are extremely severe, I suggest the former, for which psychiatric help may be required (see page 258). If the tension headaches are not too distressing, they can be relieved by aspirin.

RELIEF OF ORDINARY TENSION HEADACHES

Take one or two aspirin tablets. If necessary, repeat in one or two hours. *Avoid* Pyramidon, barbiturates, or anything containing bromides. They can be habit-forming and dangerous, especially if taken to excess; every year a number of people are made ill, sometimes seriously, by these medications. The different brands of aspirin are all alike, and it does not matter which company puts it out, but be sure to discover whether the tablet contains anything in addition to aspirin. Individuals who find that aspirin has a distressing effect on the stomach should try Bufferin, an aspirin preparation which contains neutralizing substances, and is less apt to upset the stomach.

If aspirin does not work, try to relax by resting in a quiet place. Some people find that gentle massaging of the neck muscles will relieve a headache; others massage the entire scalp quite vigorously. In some instances, application of an ice-bag to the head for 5 or 10 minutes proves beneficial.

If these methods do not work, ask your doctor for his help.

INSOMNIA

Most of us who live in noisy cities, work at competitive jobs, worry about our children being in an automobile accident, and don't even relax during our hours of recreation, know what it is to have occasional—or recurrent—sleepless nights.

Talking about insomnia is almost like discussing human nature, because there are as many variations on that theme as there are individuals. Here are some questions to answer in determining the cause or type of your insomnia:

How much sleep do you need? Some people suffer from "insomnia" because they think they need more sleep than they actually do. I discuss sleep on page 5, and on page 803. I point out the fact that some elderly people require less sleep than they did when they were younger.

Are you "too tired" to sleep? It is hard to relax if you are, and relaxation must precede sleep. Try not to overdo things during the day. Even more important, slow down as evening approaches, so that your "machinery" can coast to a halt.

Is there a physical cause for your inability to sleep? Some people are sensitive to things that do not disturb the average person; they are normally light sleepers. Poor sleeping conditions such as noise, light, someone moving around, sharing a bed with someone they don't want to disturb or who disturbs them, make it impossible for them to sleep well.

Would you, if married, sleep better by using twin beds, or a separate bedroom? Do you drink too much coffee, tea, or cola drinks? Caffeine in these beverages keeps some people awake. Do you eat heavy meals before bedtime and toss around with gas and "indigestion"; or drink fluids that make your bladder feel distended? Have you any illness or Nuisance ailment causing pains, aches, or discomfort?

Is there any emotional cause for your insomnia? Problems, worries, and fears (real or imaginary) will make you tense, whether you are conscious of them or not. They may also cause nightmares that make you resist the idea of going to sleep.

If your insomnia is due to any of the above reasons, try to eliminate the cause. If you can't, be sure to see a doctor because he will be able to help you.

Methods for getting to sleep—or returning to sleep if you awaken.

1. Don't be afraid of staying awake. It is not going to hurt you, if you don't worry about it. Many people can simply relax or doze and be perfectly rested the next day. Incidentally, most people suffering from insomnia actually sleep more than they think they do.

2. Make the two hours before you go to bed *peaceful* ones.

3. Go to bed half an hour to an hour sooner than you expect to go to sleep. Read something soothing until you feel drowsy. Then turn off the light.

4. Relax physically. Try to let your muscles "go" and feel yourself sinking down into the mattress.

5. Relax mentally. Try not to think of anything when you start "court-*ing*" sleep. Since this usually isn't possible, find something relaxing to think about. The time-honored "counting sheep" is too dull for most people. Personally, I like to imagine I'm sitting in a boat with my fishing rod waiting for a bite as I watch the water. One of my wife's friends sews endless seams. Another friend tries to focus her eyes on the window, knowing they will soon become so heavy she will have to close them.

6. If you don't go to sleep, and lying quietly disturbs rather than relaxes you, begin again by reading for a while, or try listening to soothing radio music.

7. If sexual tension is a major factor in the insomnia, read page 299.

Again, let me urge you that if your efforts are not rewarded and you are still troubled by insomnia, *see a doctor*. He may give you something to relieve the discomfort that is keeping you awake; an aspirin tablet for that nagging headache, perhaps. Or he may give you some "sleeping pills." These are safe *when taken under a doctor's orders*, in cases where lack of sleep may actually cause ill health, or in times of special crisis or worry, or to "break the insomnia habit." There are a number of

kinds of medicines, and choosing the proper one is most important, for some help people to *get to sleep* while others are slower acting and are used for people who go to sleep easily and then awaken. Some people are sensitive to certain of these medicines, which is one of the reasons a doctor, and only a doctor, should find the right one for you. It is true that these pills are a "crutch," but crutches can be useful and even necessary.

THE COMMON COLD

The common cold is the most common of the Nuisance diseases. Although I have run into people who proudly claim "I never catch a cold!" I have as yet to meet anyone in my own medical experience who has not had at least a few—even though he or she may ignore them, and pass them along to others. All but 10% of the people in this country have a cold every year, and over half of us have several.

Colds are a special problem in children, frequently causing ear infections as well as other complications. Also, many childhood diseases start with the symptoms of a cold. For these reasons, I have discussed colds in infants and children elsewhere in this book (see page 411).

I hope I can convince you that colds may also be serious in adults. As you know, they may start with a brief "dry" stage, during which the nose usually feels "prickly," and there is a tickling feeling in the throat. Then the eyes become watery. Sneezing, a "running" nose, a cough and sore throat, headache, and some fever follow. Then the secretions become thick and the cold begins to "dry up." "Three days coming, three days with you, three days going" is an old, and still fairly accurate, description of the course of a cold.

These symptoms are common, and familiarity breeds contempt. Many people feel that there is no need to bother about a cold, and go their regular way in spite of it. This is dangerous. A cold is potentially serious, because it is frequently accompanied by complications, including diseases such as pneumonia. A cold should be regarded as an illness which must be prevented and treated.

"I'd be glad to, if I knew how!" you are probably saying. "If there were any way to prevent or cure a cold, I'd do it in a minute."

It is true that medical science has not yet discovered any exact method for preventing or curing colds. There is no vaccine, no medicine, certainly no advertised "cure" to do it. The tremendous amount of research devoted to the common cold may bring the answer at any time. However, I want to caution you against putting your faith in any new preventative or cure you may hear about. Even if it is the result of

sound scientific work (and most "cures" are not) it will undoubtedly take a long time to determine its exact effectiveness. You can readily see how difficult it is to obtain accurate records of something as universal, variable, and mild as the common cold—compared, for example, to a disease such as smallpox.

Does that mean nothing can be done about colds? By no means. Colds can be prevented in a number of instances. Their duration can frequently be shortened and their complications very frequently prevented.

THE CAUSE AND PREVENTION OF COLDS

Colds are caused by a virus to which the body is particularly susceptible when its resistance is lowered. Although this virus itself is not able to do much damage, it paves the way for more dangerous types of microorganisms.

People who have this virus in its active form—that is, people who have a cold, especially in its early stages—spread it to others. It can be transmitted by close contact, particularly kissing, and by handling contaminated objects such as handkerchiefs. But the *main* method of transmission is a cough or sneeze. Pictures taken of sneezes by high-speed cameras show that a cloud of particles containing the germs is spread around an area extending approximately three feet in front of the person who sneezed (see illustration, page 178). Most of these particles can be caught if the sneeze or cough is smothered by tissues or a handkerchief. *Colds can be avoided if people will take this simple precaution.* It is true you can't persuade everyone to do this, but you can cut down on the number of colds in your own household; and if your friends won't do it, you can avoid them when they have colds. A little tact and the explanation that you are susceptible to colds will often make it possible for you to keep a safe distance or postpone some visit until your sneezing friend has passed the most contagious stage. Naturally you can't stay at home all winter when colds are most prevalent, but you can keep out of crowds as much as possible during a wave of colds, especially if there is much influenza and pneumonia associated with them.

Some immunity follows a cold, but it is usually brief, so don't count on it.

Taking vitamins won't prevent or cure a cold. But, of course, it pays to eat a well-balanced diet (see page 25). People in good physical condition catch colds, but they are better able to resist some of the complications that may follow.

Chilling lowers the body's resistance to colds. This varies a great

deal in different people, some of whom become chilled very easily (see page 5). Each of us must learn for himself just how careful to be about sitting in drafts, and getting wet feet. Don't let the mistaken notion that it is heroic to go without rubbers or a warm coat increase the number of colds you get and give to others. Be especially careful about working in cold, damp places, and any exposure that leaves you shivering; get into warm, dry clothes as soon as you can after being wet or chilly.

In spite of these precautions, you will probably get an occasional cold. I wish that you would call a doctor when you do. His judgment, based on your condition, will enable him to decide how your cold should be treated—for example, how long you should rest. He will almost certainly be able to prevent complications such as pneumonia.

Unfortunately, most people cannot afford to—or don't want to—call the doctor for an ordinary cold. That is why I'm going to tell you what to do for one. However, *there are certain people who must see a physician*. Even a mild cold can represent a severe threat to their health, possibly to their lives. A doctor should be called promptly when anyone with one of the following diseases catches a cold:

Tuberculosis

Rheumatic fever or rheumatic heart disease

Chronic bronchitis or bronchiectasis

Kidney diseases, especially Bright's disease and chronic pyelonephritis

Severe liver disease

Heart disease that is severe enough to cause shortness of breath

Asthma

Severe sinusitis

WHAT TO DO FOR AN ORDINARY COLD

If you possibly can, go to bed as soon as you feel that you are coming down with a cold. You should stay away from others anyway, in order not to spread your cold, so why not go to bed where you, too, will be better off? Stay there, or at least keep warm and avoid changing temperatures, until you are past the "runny" stage. Drink plenty of liquids and eat moderately of anything that appeals to you and doesn't cause indigestion. Be careful about blowing your nose so hard that you force infection into the sinuses and ears. If your nose is badly stopped up, *ask your doctor* to tell you what kind of drops to use. Don't use nose drops or inhalers just because your friends or advertisements recommend them. They can do more harm than good. In my opinion, antihistamines are greatly overrated as preventive or therapeutic compounds for the common cold.

Don't take medicines that promise to "relieve the symptoms of a cold." Plain aspirin (or Bufferin if aspirin upsets your stomach) brings the quickest and safest relief. Take one or two tablets every two to three hours if necessary.

Protect the other members of your family: Smother all coughs and sneezes in a handkerchief or tissue.

Wear a gauze mask, which can be obtained at the drug store, whenever someone comes closer than three to five feet from you.

Put all tissues (toilet tissue or paper napkins will do) into a paper bag after using them. Don't handle the outside of the bag. The tissues can then be easily disposed of without contaminating anyone else.

See to it that no one handles objects you have contaminated, or handles them as little as possible, washing his hands immediately. Your eating utensils, dishes, etc. should be washed separately from those of the other members of your family, and rinsed in scalding water.

Be sure to call a doctor if:

1. You have a fever that lasts for more than two or three days, or goes above 103°.
2. You have a severe headache that does not respond to an aspirin.
3. You have chills, a severe cough, chest pains, blood-stained or rusty-looking sputum.
4. Your back, neck, or any other bones ache. You "ache all over."
- You have an earache.
5. Your cold symptoms don't clear up. (You may actually have hay fever or some other allergy which I describe on page 739.)

OTHER TROUBLESOME CONDITIONS OF THE NOSE, SINUSES, AND THROAT

Inflammation of the membranes of the nose, the sinuses, and the throat is a frequent, annoying difficulty. These conditions are called by various names such as catarrh, postnasal drip, sinusitis, irritated throat, and smoker's cough. They can be caused by a number of conditions in addition to colds, e.g., infectious diseases; decayed teeth; enlarged, infected tonsils and adenoids; allergies; irritation by cigarette smoke, and dry or dusty air; vitamin deficiencies.

I discuss sore throat and tonsillitis, which are potentially serious diseases, on page 413. The nose and its care are described on page 138. Here I want to emphasize certain other important points.

Proper treatment of irritations of the nose, sinuses, and throat depends on finding the cause. That is why you should see a doctor promptly. Don't wait until the condition becomes severe or chronic. Incidentally,

chronic sinusitis is far less common than most people believe; but inflamed sinuses can be extremely painful. People often neglect this condition until they feel they can't stand the pain any longer, and seek relief in an operation. The results of this difficult operation do not always live up to what the sufferers hoped for. Don't decide on one without careful thought and consultation with a doctor who has had a great deal of experience in treating sinuses by other means.

I realize that, unfortunately, many people will not see a doctor for mild cases of these Nuisance ailments. If you won't go to a doctor, don't do yourself harm by attempting to cure these conditions yourself. Nose drops, sprays, and inhalers should not be used unless they are prescribed by a doctor. They can do far more harm than good, for example, by irritating the membranes which may be causing the trouble simply because they are unusually sensitive.

For temporary relief, if you cannot see a doctor, do no more than the following:

Catarrh (postnasal drip). Avoid cold and dry air and cigarette smoke. Keep one or more pans of water in your room, preferably on or near the radiator. Stay indoors if possible on a cold, raw day; wear warm clothing and don't get chilled. Blow your nose *gently*. Although the accumulation of mucus is unpleasant and irritating, it won't poison you or upset your digestion if you swallow it.

Sinusitis. Avoid cold and dry air, as I have explained above. If the pain is severe, inhaling the steamy vapor rising from a basin of hot water may bring relief, but be careful not to use boiling water as the steam is scalding. An electric heating pad or a hot water bottle, protected by a cloth cover to prevent burns, may be helpful if applied over the painful area on the face or forehead. Ten minutes every two hours would be a good schedule. Take an aspirin or Bufferin tablet every two or three hours to relieve the pain.

Irritated throat and smoker's cough. Stop smoking, or cut down on it drastically; or try filter-tip cigarettes or a holder with a filter in it. Gargle with a third of a glassful of water in which two aspirin tablets have been dissolved; swallow a small amount of the thick suspension. Aspirin is a mild local anesthetic and helps to soothe the irritated mucous membranes. If this method gags you (as it may, especially in the morning when the symptoms are most in need of relief) try plain warm water as a gargle, or chewing gum, followed by a soothing throat lozenge. Avoid breathing through the mouth.

If these simple methods do not bring relief, *be sure to see a doctor* be-

fore these Nuisance ailments develop into something *more* than a nuisance. They may be symptoms of more serious illnesses.

ALLERGIES (Including Hay Fever and Eczema)

About one person in ten is allergic to something, that is, he is hypersensitive to something which is not in itself poisonous or harmful, e.g., pollen, foodstuffs. The result may be a minor or a major nuisance; it may even be disabling—for example, an allergy that causes asthma (see page 665 for separate discussion of this disabling illness).

There is so much discussion about allergies these days that some people are inclined to think they are new diseases. Actually it is only the word and our knowledge that is new. Centuries ago physicians described this condition, and probably even before records were kept, some people got hives or a rash from eating certain foods, while others suffered from “catarrh” after breathing ragweed pollens.

The impetus for our new scientific knowledge of allergies was provided only about fifty years ago, when doctors discovered that while one injection of horse serum antitoxin would do no harm, a second might cause death. Investigations showed that what we now call allergic reactions are basically similar, although they differ in certain ways.

We still do not know just why allergic reactions occur. Why, for example, should some babies react to an ordinary food substance such as egg yolk? Why should an adult suddenly become sensitive to something that never troubled him before?

But we do know what happens to the person with an allergy. The substance to which he is allergic may be something he eats, breathes in with the air, touches, or is given as an injection. The bronchial tubes, the skin, and the mucous membranes of the nose, eyes, and throat, and the intestinal tract are some of the parts affected. The symptoms vary according to which of these parts becomes congested or irritated; more than one part can be affected by the same *allergen*, as the substance causing an allergy is called. We know, too, that allergies tend to run in families. Also, some allergic ailments may be influenced by emotional factors. People can be allergic to more than one allergen. An attack can, and usually does, make the victim more susceptible to future attacks, although sensitivity may vanish.

PREVENTION AND TREATMENT

In some cases the victim himself knows what is causing his suffering, but more often it is difficult to track it down. Today we are able to

make tests which will show not only the guilty substance but, in many cases, the degree of sensitivity to it. The most common tests are the patch, scratch, and injection methods made by applying the suspected allergens to the skin. A complete screening for allergic sensitivity may require as many as thirty skin tests (see illustrations 35-1 and 35-2). These tests must be made by a trained physician. Only an extremely minute

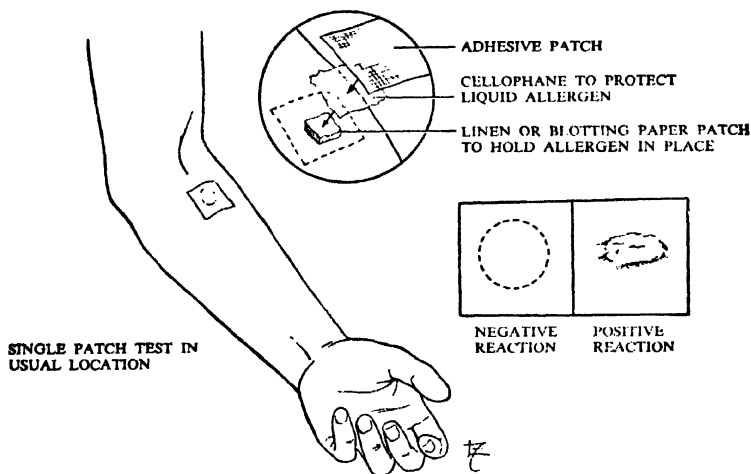


Illustration 35-1. PATCH TEST FOR ALLERGY.

1. "CONTROL," USING ONLY DILUENT
2. PASTE FORM, NO DILUENT REQUIRED
3. POWDER FORM, APPLIED WITH A DROP OF DILUENT FROM END OF TOOTHPICK

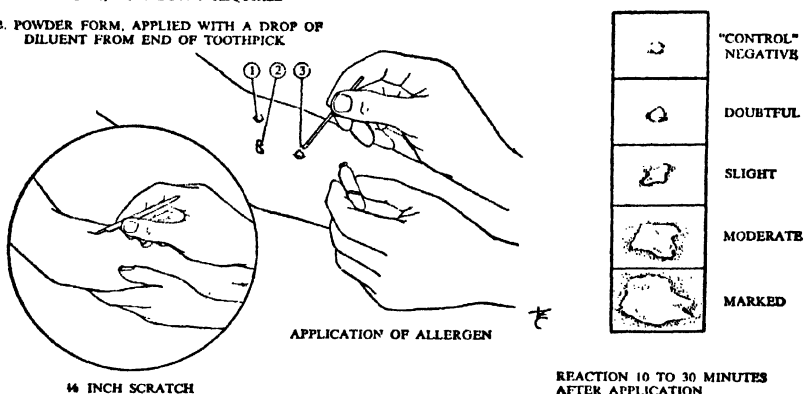


Illustration 35-2. SCRATCH TEST FOR ALLERGY.

quantity of the substances should be used, because severe toxic reactions can occur.

However, it is well worth while to find out what is causing an allergic reaction. Treatment and prevention usually depend on this. I advise everyone who suffers from any allergic conditions to do everything possible to find out the cause. This is important not only to comfort, but to health itself, as I shall point out below when I discuss various allergic ailments.

Your doctor may require the help of a specialist, an *allergist*. Having discovered the cause of the reaction, the doctor will do some or all of the following:

1. He will help you to avoid the cause of your allergic reaction.
2. He may give injections that will desensitize you partly or completely to the allergen or allergens.
3. He will give you medicines to stop or alleviate the attacks or their sometimes dangerous symptoms. These medicines include Adrenalin, usually given by injection, and antihistamines. He may show you how to administer these yourself if necessary. *But they should not be taken except when and as directed by him.* ACTH and cortisone (see page 101) promise to be valuable in treating allergies. Being expensive, they are usually employed only in severe cases; in addition, they are not without hazards, and so must be administered only by a doctor with experience in their use.

In addition, the doctor will search for any possible connection between your allergic reactions and emotional stresses, and help you to overcome them if they are responsible. He will prevent the secondary illnesses that frequently appear when allergic attacks have prepared the way. And, of course, he will determine whether there are any other illnesses hiding beneath the allergic symptoms.

As I said, allergies frequently involve the bronchial tubes, the nose, the intestines, and the skin. I shall discuss typical examples of each, with the exception of the bronchial tubes, the symptoms of which I describe under asthma, on page 665.

HAY FEVER

This is the term used to cover most of the allergic reactions in the nose, usually caused by substances which are inhaled. These include pollens, dust, and a number of things such as animal hair and feathers. Foods and medicines can also cause hay fever. Consult your doctor about the common *allergens* and the pollination schedule for different parts of the country. The latter is particularly useful to victims of hay fever when planning a vacation. The different types of hay fever are:

1. *Perennial hay fever.* This occurs at any time of the year. It is due to house dust, animal hair, feathers, and certain other substances, including foods.

2. *Seasonal hay fever.* This is the most common type. If it occurs in the spring, it is due to tree pollens; in the summer, to the pollens of grasses. In the fall, when it is most frequent, it is usually due to ragweed pollen. Of course, there are parts of the country in which pollens are present during almost all of the year.

The symptoms usually center in the nose, eyes, and face. There is tickling, stuffiness, a watery discharge, and itching of the eyes and face. The condition may be mistaken for a cold.

If you have hay fever, *be sure to see a doctor.* It can become far more than "just a nuisance," for it can affect your general health, causing loss of appetite and sleep, and inflammation of the ears or of the sinuses, throat, and bronchial tubes.

Treatment varies according to the allergen responsible. In some cases the offending object can be avoided—for example, getting rid of a cat or dog will often be sufficient in cases that are due to the "dander" of these animals, or parting with that "sable" coat that is actually made of rabbit fur to which you are sensitive. Or it may be possible to go to the seashore for your vacation if the pollens in the farm you visited are responsible. If you can't escape from a place abounding in pollens to which you are allergic, an *air conditioner* in your room may mean the difference between misery and comfort. A filter mask or a small filter in the nose may be necessary. In addition, your doctor may be able to give you injections that will prevent attacks. But remember—these injections should be made in advance; it is usually too late if you put them off until the attacks have begun. And it is just a waste of money to start them and then not see them through. Your doctor may also give you medicines to relieve your hay fever, in the form of eye or nose drops, sprays, or pills. As new medicines are constantly being discovered, be sure to see your doctor regularly and do not assume that nothing more can be done for you.

ALLERGIC REACTIONS OF THE DIGESTIVE SYSTEM

Although allergic reactions to certain foods usually cause hay fever and skin reactions (which I shall discuss next), there are some that involve the digestive system, causing nausea, vomiting, and dizziness. Because so many potentially serious conditions can cause the symptoms of "indigestion," I think it is most unwise for anyone to decide they are caused by an allergy. Be sure to read about "indigestion," which I discuss on page 120. Your doctor, or an allergist, can sometimes

are not sensitive to it. The itching, blisters, and watery discharges with which we are all familiar are quite typical of skin allergies.

A great many other things can cause contact dermatitis, including industrial oils, medicines, cosmetics, perfumes, soaps, mouth washes, clothing made of various materials or treated with certain preservatives, and dyes (see Illustration 35-3). One part, or many parts of the body, may break out, as in the case of poison ivy. Sneezing and other nose symptoms may accompany the skin symptoms.

HIVES (URTICARIA)

Hives are usually caused by foods, but they may also be due to medicines or injections of serum. As a rule, swellings—wheals or welts—suddenly appear on the skin. Usually they disappear again in an hour or two, but they may last a day or even longer. Often the itching or burning is so severe that the sufferer is miserable. For immediate relief, bathe in a tub of tepid water to which two cups of “basic mixture” of Linit starch, made according to the directions on the box, have been added. A cheesecloth sack containing four to six tablespoonfuls of rolled oats can be placed in the tepid tub instead of the starch; the bag can be used to “rinse” the body. If the itching is localized, relief can be obtained by applying a compress dipped in ice-cold milk. It is, of course, important to discover the cause of hives, and to call a doctor in severe cases.

“Giant hives,” *angioneurotic edema*, may appear on the lips, tongue, throat, eyes, and other parts of the body. An attack in the throat may interfere with breathing. A person subject to hives should discuss *emergency* treatment with his physician in advance, and not wait until a serious attack occurs.

ECZEMA

Eczema is a term that means many things to many people. One of the greatest recent advances in dermatology has been the differentiation of various types of eczema, making the development of effective treatments possible. Having a doctor diagnose and treat this condition is, therefore, most important.

In eczema, a rough, red, itching rash appears, which soon turns into scaly, “weeping” and crusted patches of skin. These are often located around the elbow and the back of the knee, but may cover practically the entire surface of the body, including the face.

The physical discomfort caused by eczema is particularly hard on infants and small children, disturbing their sleep and causing them to lose

their appetites and become run-down. Adults usually suffer emotionally as well, because eczema makes them unsightly; it is even regarded with revulsion by people who *mistakenly* believe it to be contagious. Also there is always the danger that the sore spots will become infected.

A great deal can be done to help babies and adults suffering from eczema. Unfortunately, it is difficult to determine the cause of eczema in babies, because the skin tests usually do not work on them. Therefore the mother must help the doctor in playing detective to discover the cause. She will be lucky if the allergen turns out, as it frequently does, to be wool or talcum powder, because she can omit the powder, or substitute cotton and nylon for the wool, without much difficulty. But it is often much more difficult to track down and eliminate the cause. Fortunately, eczema in babies often clears up or at least improves when they are two to three years old.

Don't fail to consult your doctor if your baby has eczema. Many skin disorders resemble it, or follow it; and, as I said, there is always the danger of infection. *Don't* put your faith in any eczema "cure." It can be dangerous. The most you should do for your baby or for yourself is to avoid irritating this condition. Go easy on soap and water, and apply calamine lotion to relieve itching.

IF YOU HAVE AN ALLERGY

1. *See a doctor, the sooner the better.* Allergies very seldom vanish by themselves. More often, they get worse, which means you'll have to do something eventually. Why not now, before you've suffered too much?

2. *Keep in good health.* Get plenty of rest and fresh air and maintain a balanced diet. This will help you to avoid the infectious diseases which may bring on nose and bronchial allergies, and help prevent the complications that often follow attacks.

3. *Avoid tensions and emotional disturbances.* We do not know the exact connection between allergies and the emotions, but we know that a relationship does exist between them. Certain skin allergies have been shown to be of a psychosomatic nature (see page 249). And many people with allergies have clearly recognized the fact that their attacks are more frequent and severe when they are nervous and upset. If this happens in your case, ask your doctor about the advisability of getting psychiatric help (see page 258).

4. *Remember, you can become allergic to practically anything.* Even if the cause of your allergy has been discovered, don't assume you need not look for a *different* allergen if your attacks return. A patient of

mine, whose eczema was caused by face powder, later became allergic to sunlight.

5. *Take special precautions if you have an allergy, however trivial.* Make sure you are tested before taking any medicines, vaccines, or serums. Your regular doctor who knows about your problem will undoubtedly take it into consideration, but if you see a new doctor, be sure to tell him. You could get a severe reaction to a medicine. *For example, if you need an injection of tetanus antitoxin, your doctor should first try a little of it under the skin or as a drop in the eye to determine whether or not you are sensitive to it.* This is a routine precaution with everyone, but it is especially important with people known to have allergies.

If your attacks are severe, it is wise to carry a card with you stating clearly that you are allergic to (for example) insect stings, followed by instructions from your doctor telling what should be done for you. Tell people about your allergy whenever it is necessary. If you happen to be allergic to oysters, it is foolish to risk an attack by eating some turkey stuffing containing oysters chopped so small you don't realize what they are. The attack could be more severe than usual, disturbing both you and your hostess far more than your questions would. Don't be sensitive about your sensitivity!

Allergies are a nuisance—but your doctor can help you prevent, control, or avoid their highly unpleasant and sometimes serious effects.

CONSTIPATION

Some years ago, a friend of mine who is a physician told me that he had been telephoned at a dinner party the previous night by a patient who said she couldn't go to sleep because she hadn't had a bowel movement in 36 hours. "I was very much tempted to tell her I hadn't either," my friend remarked with a smile. "But, seriously, I sometimes think people would be happier and healthier if they didn't know constipation existed. It's becoming *the* American obsession."

Too many people suffer from constipation that is nonexistent, except in their imaginations, or self-induced, or could be corrected with time, patience, and common sense.

Before I go into this any further, I want to stress the fact that constipation *can* be *organic*—that is, due to actual physical change in some organ. It can be caused by a tumor or cancer which is obstructing the intestines, a stricture which narrows them, or some disease such as a hypothyroid condition. That is why it is important to *consult a doctor if you have constipation*, especially if it has come on fairly suddenly. This is essential for people who are middle-aged or older, in order to

make certain that a cancer is discovered while it is in the early, curable stage.

Here is the medical definition of *real* constipation: A person has constipation when the bowel movements are too hard to pass easily, or are so infrequent that uncomfortable symptoms result. Constipation does *not* mean failure to pass a stool every day. This may be *imaginary* constipation.

Movements that are too hard to pass easily require straining and can bring about rectal troubles such as hemorrhoids and fissures which I discuss on page 755, or they can aggravate hernias or the tendency to a hernia (see page 711). Constipation can cause a number of uncomfortable symptoms which include nausea, heartburn, headache, or distress in the rectum or intestines, continuing until the stool is passed. You notice I say uncomfortable rather than harmful. That is because these symptoms are due to the nerves which send "distress signals" to various parts of the body when the rectum is distended by the retained fecal matter. *These symptoms are not due to "autointoxication,"* or absorption of poisons from the fecal matter. In experiments, it was found that similar symptoms arose when cotton was inserted into the rectum after all the fecal matter had been removed.

Some people suffer far more than others from these distressing symptoms. This is not due to their imaginations; they are actually more sensitive.

In *imaginary constipation*, the bowel movements are not difficult to pass and cause no unpleasant symptoms, but simply do not occur as often as the individual thinks they should. Very often, it is a fond mother or some other relative who insists the movements should be more frequent. Remember: bowel habits can be perfectly normal without being "average." The "average person" has a movement every day, usually right after breakfast. But countless people are perfectly normal even though they have more than one movement a day, or a movement only every other day—or every third, fourth, fifth, or even eighth day! People vary a great deal in body makeup, type of intestine, eating habits, physical activity, and custom.

By *self-induced constipation* I refer to the kind that is caused by one or more of the following—which I shall discuss when I tell you how to prevent or cure constipation:

Improper diet—eating the wrong things or eating too little.

The use (that is, *abuse*) of laxatives, cathartics, etc.

Irregularity in habits of elimination.

Our modern mode of living, with its strains and stresses and sedentary habits, helps promote these. In some primitive languages, there is no such word as constipation, and no need for it as the condition does not exist.

Functional constipation can also be caused by "sluggishness." After food has been digested in the stomach and intestines, the residue is passed along in the form of watery material. The water is absorbed in the colon; that is why the feces become hard and difficult to pass if they remain there too long before being eliminated. The stools are pushed along by a series of wavelike, *peristaltic* movements. These "waves" are irregular; usually they are strongest in the morning, which is why it is easiest to have a bowel movement before or just after breakfast.

In some people, peristalsis is weak. This is apt to happen with increased age; elderly people may have to use some method to help in elimination (see page 799).

HOW TO PREVENT OR CURE FUNCTIONAL CONSTIPATION

If you actually have constipation, there are certain things you can safely do to *cure* it. These same methods will also *prevent* you from becoming constipated.

1. *Cultivate regular habits of elimination.* Choose a regular time shortly before or after breakfast every morning for going to the toilet, and attempt to defecate whether or not you have "the urge." Allow ten minutes. Relax and be comfortable. You can read or smoke if you like—the main thing is not to feel hurried or tense. Prop your feet on a footstool so that your knees will be close to your chest. If you go before breakfast, it will help to drink a glass or two of fluid upon getting out of bed; it can be warm or cool water, fruit juice, tea, or coffee.

Cold winter mornings present difficulties to people who have no warm indoor toilet. If you face this problem, do the best you can to keep yourself comfortable. Dress warmly and, if possible, take along a portable heater. In bitter weather, perhaps you can use a "chamber pot" or a "chamber chair" indoors where it is warm. These chairs, or commodes, have a cutout seat with a collecting pot underneath. They were common in the old days and are still made for invalids and aged people, and are very comfortable.

Teaching your bowels to move regularly is a little like training yourself to wake up at a given hour every morning. It can be done with patience, and once acquired, the habit persists.

2. *Diet.* The residue of the foods you eat is easier to eliminate if it contains some roughage in the form of fibers, lubricants in the form of fats or oils, and fluid. These should be included in the diet of *healthy* people. I stress this word because people suffering from certain diseases will not, for example, be able to tolerate roughage. On page 25 I give charts describing normal food requirements. Be sure you follow them. To cure or prevent constipation, also make sure that your diet includes:

For breakfast: $\frac{1}{2}$ to 1 glass of juice—tomato, grapefruit, prune or orange juice. Also, have one item from each of the lines (a) through (e) with your breakfast.

- (a) Mixed dried fruits—prunes, apricots, stewed figs.
- (b) Cooked, whole-grain cereals with milk—barley, brown rice, oats, wheat.
- (c) Butter or margarine.
- (d) Whole-grain bread.
- (e) Beverage.

For lunch, dinner or supper, some of the following:

- (1) Green leafy vegetable—beet greens, spinach, escarole, lettuce, turnip greens, dandelion greens, mustard greens.
- (2) Baked potatoes (eat skins).
- (3) Butter, margarine, salad oils.
- (4) Dried or stewed fruits—especially for dessert at the evening meal.

Take two glasses of fluid between meals and at least eight during the day. Drink an extra amount of water in summer because part of it is lost in perspiration.

3. *Exercise.* Strong abdominal muscles are helpful in aiding the bowels eliminate gas and stools. If you do not have a firm, well-toned abdominal wall, be sure to start on the exercises described on pages 11 and 12. If your job requires much sitting, you should indulge in regular sports or other forms of exercise (page 7). You will feel better, generally, and also have less tendency toward constipation.

4. *Live sensibly.* Try to avoid the strains and stresses of modern living. Get some relaxation. *Don't worry about your constipation.* If your doctor gives you a clean bill of health on your periodical checkups and you follow my suggestions for "home checkups" between visits (see page 556), your constipation isn't going to harm your health. Usually, these suggestions are enough to prevent or cure constipation. If they are not, and failure to move the bowels causes real discomfort, you may:

5. *Take an enema.* Use a pint of warm water containing a level teaspoonful of table salt. If you use an enema bag, hold it about two feet above the toilet seat; if you use a bulb, don't press it too hard—the water should flow under *gentle* pressure (see page 514). This should soften the stool so it can be easily passed. You may take one every few days, but remember, this is a "crutch" and the sooner you discard it, the better off you will be. If an enema doesn't help, your doctor can show you how to insert olive oil into the rectum at night through a catheter, which will soften the stool and make it easier to pass in the morning.

6. If you cannot take an enema, *take a mild laxative* such as petrolatum and agar, aromatic cascara sagrada, or milk of magnesia.

Do not do this until you have given your bowels a chance to work by themselves. The first step in curing constipation is to stop taking all laxatives and cathartics. Laxatives are frequently the *cause* of your constipation, and seldom necessary in its cure. *Suppositories* can be irritating and cause rectal fissures, or increase their severity (see page 756). *Bulky substances* such as bran can produce irritation of the colon. *Mineral oil* may lead to indigestion or interfere with the absorption of vitamins.

A final word of warning: Don't give a laxative to a child—and don't take any cathartic or laxative yourself—if there is any fever, nausea, pain, or general feeling of illness associated with the constipation. It can cause fatal consequences if the condition is caused by appendicitis (see page 654).

PSORIASIS

At the beginning of this chapter I said that I had discussed most skin ailments earlier in the book. Although many of them are nuisances, I feel that psoriasis, like eczema, deserves a special place. These two conditions probably cause as much distress as all the others combined.

As far as we know, psoriasis is not an allergic condition. In fact, its cause is not known; none of the research carried out to date has definitely indicated the cause, although it has told us much about the disease. We know that it is not due to an infection, and *it is not catching*. It does not appear to be related to diet. It may run in families. It seems to bear some relationship to lack of sunlight, as it is less common in the tropics, rarely appears on the exposed parts of the body, such as the face, and usually gets worse in winter. There are definite indications that emotional factors play a part in this disease, although it can be found in stolid as well as "nervous" individuals. It is not dangerous to life or health—although it can become so if it is self-treated with some advertised "cures."

Why, then, do I consider it a nuisance worthy of special mention? Mainly because the affected areas are usually so unsightly. Rounded or scalloped reddened patches, with sharp borders, appear on the skin. They are covered by layers of shiny, silvery dry scales resembling the scales of mica rock. They appear most frequently on the elbows, knees, lower back, and scalp. The hair is apt to fall out in the affected scalp areas, but fortunately it usually grows in again. The soles of the feet, folds of the body—in fact, any place can be covered with these patches, and they must often be bandaged to prevent the clothing from sticking.

Young adults are most frequently the victims of this disease. It is

rare in children under five, and seldom occurs in aged people—in fact, it sometimes shows marked improvement or even disappears after the age of fifty. But sensitive young people suffer a great deal, especially emotionally. In the past, they were often regarded as lepers, and even today they are often made to feel so inferior that they become shy and withdraw from life.

Psoriasis is resistant to treatment; it may be chronic or acute; even if it clears up, it is almost bound to recur. There is no known cure.

Does that mean that nothing can be done for anyone suffering from psoriasis? By no means. A doctor experienced in treating this condition can do a great deal for the *itching* and disfigurement. But this is an erratic disease, and each case requires individual attention. Although the application of an antihistamine lotion will bring relief in some cases, it causes an irritation in others. Some severe cases have responded to ACTH or cortisone—which can be extremely dangerous unless administered by an experienced physician. Natural sunlight may help tremendously, whereas an ultraviolet lamp does not. Great care must be taken to avoid sunburn in acquiring a tan. In long-standing cases, white petroleum jelly or olive oil applied to the scales is helpful. The coal-tar ointments should be used only under a physician's supervision.

In severe cases it is often a good idea to go to a hospital or sanatorium which specializes in the nursing and medical care the patient requires while the most effective method of treating his case is worked out. Many patients tell me that tensions and business worries make their attacks worse, which makes me feel that psychiatric help (see page 258) should sometimes be recommended. I also feel that psychotherapy is very useful for people who become ashamed of their condition, and suffer emotionally; I have known of marriages that were seriously endangered because of psoriasis. These worries and shame reactions may aggravate the skin disease.

Don't be embarrassed about discussing your emotional reactions with your doctor if you suffer from psoriasis. He can often reassure you and help you to relax. He can help you to conceal the blemishes. In severe cases, he may work with a specialist in dermatology to ascertain the maximum therapeutic program for your particular case. Research on psoriasis is exploring new methods of coping with it, so don't decide that nothing can be done, even if your case has resisted treatment in the past.

DISFIGUREMENTS OF THE FACE AND BODY

In the past, people used to believe that anyone with a natural disfigurement should, and must, reconcile himself or herself to it. Today, doctors are doing everything possible to change this attitude. We realize that

such things as a huge, unsightly nose, protuberant ears, or a badly repaired harelip can cause feelings of inferiority, often resulting in serious emotional disturbances, and that they frequently interfere with the individual's ability to earn a livelihood. We know, too, that there is no need to endure these handicaps, because of the remarkable progress of plastic and reconstructive surgery. Understanding this will also prevent people from putting off operations for fear of becoming disfigured, as I have known people to do, with tragic consequences, in cases such as an early, curable cancer of the lip.

Of course, we all know of people who *believe* themselves to be disfigured by what is actually only a minor irregularity. That is one of the many reasons why I urge you to discuss all problems involving disfigurement with your family doctor. He will evaluate the situation and if an operation is indicated he will know how to find a good plastic and reconstructive surgeon. Be sure to consult your doctor about wens, fatty tumors, and other growths (see page 160) even if their appearance doesn't particularly trouble you, as it may be necessary to remove them to prevent later difficulty. NEVER consult a self-styled "beauty expert" in these cases. Your doctor will know which ones can be trusted in matters such as the removal of unsightly hair. Countless people have been victimized by quacks who not only take their money for nothing, but often actually disfigure their victims and even endanger their lives.

Remember, too, that while it is certainly advisable to have disfiguring conditions corrected early, remarkable results have been obtained late in life. So there is no need to believe it is too late to do anything for yourself or some member of your family.

SQUINTS (CROSSED EYES)

I was quite astounded recently to see a potentially very attractive young woman in her twenties whose appearance was marred by a severe squint in one eye. She had not had it corrected in childhood, and just assumed that nothing could be done to help her. Of course, it would have been better to have corrected this disfigurement in early life—but this unsightly crossing of the eye could still be improved by a relatively simple surgical operation. Since the muscles involved are *outside* the eye itself, there is no danger to the vision—provided, of course, that the operation is performed by a competent surgeon.

Although crossed eyes can be corrected late in life, it is most important to consult a doctor early for this condition. It is usually associated with, or gives rise to, some visual difficulty. If it is not attended to in time, the vision may be badly impaired.

Parents often wonder whether or not their babies are cross-eyed. The

eyes of little infants tend to waver and turn inward, but this usually corrects itself by the time they are three to six months old. If it does not, or if the eyes are continually crossed in the same way even before the baby is six months old, consult your doctor. He may be able to start correcting the condition quite early. For example, he may put a "patch" over the baby's "good" eye, forcing him to use the weaker one, instead of letting it get worse from lack of use. He may recommend glasses or exercises or both, making it possible to avoid an operation, or to keep the condition from doing any damage to the vision until the suitable time for an operation. Incidentally, it is quite unusual for anyone to become cross-eyed after the age of six, but it has been known to happen.

ARTIFICIAL EYES

I also want to call your attention to the fact that people who have lost an eye, or have one which is sightless and disfiguring, can now be fitted with a glass or plastic eye that is indistinguishable from a real one. These *prosthetic* devices have been improved so tremendously that, even though I know about them, I frequently find myself unable to believe they are artificial. Not only is such an eye absolutely identical with the natural one, but it moves in unison with it, being attached to the eye muscles. Even children can be fitted with them, new eyes being provided as they grow so that they are spared the embarrassment of having their handicap noticed.

OTHER PROSTHETIC DEVICES

Other prosthetic devices such as hands, feet, arms, and legs have been so greatly improved in recent years that they look and function as though they were real. No one, child or adult, need be disfigured today because of an accident or a congenital condition requiring the use of an artificial limb.

HARELIP AND CLEFT PALATE

These two conditions are similar, resulting from the failure of the two sides of the face to unite properly before the baby is born. This disunity may involve only the superficial tissues, or may extend to the uvula or the hard and soft palates. We do not know why this happens, but we do know there is no reason whatsoever to believe the old superstition that it is caused by something the mother did during her pregnancy. I am astonished to discover that there are mothers who feel guilty and blame

themselves for the fact that their babies are born with harelips or cleft palates.

The extent of difficulty in sucking and, later, in speaking, caused by this condition varies according to its degree. But even if it does not cause much difficulty, it should be corrected by an operation or series of operations as soon as your doctor recommends. These operations are performed so skillfully today that it is almost impossible to detect any disfigurement. Even if they have been performed imperfectly, excellent results can frequently be obtained by a subsequent operation.

"CAULIFLOWER" AND OTHER TYPES OF UNSIGHTLY EARS

A "cauliflower" ear, which we associate with prize fighters, is caused by bleeding below the skin of the ear, usually as the result of a blow. This blood eventually becomes a hard substance. It should be reassuring, especially to mothers whose sons insist on fighting, to know that this need not happen. The blood can be drawn off with a needle before it hardens and alters the shape of the ear. Of course this must be done by a competent physician, but it is a simple procedure. Even after the hardening occurs, cauliflower ears can be corrected by surgery.

Large, protruding, or misshapen ears can be operated upon with excellent results. There is no reason for being embarrassed by them, or letting your child run the risk of becoming shy and anxious because of constant teasing about his or her ears.

MISSHAPEN NOSE

Most people have heard about the truly remarkable results that are obtained by plastic operations to correct the size and shape of the nose. It is even possible to rebuild crushed and destroyed noses by means of implants of tissue from other parts of the body, or replace them with substances such as silver and latex. I have seen some of these which are impossible to distinguish from a natural nose. However, I do want to caution you against having your nose, or that of your child, operated upon by anyone but a *really competent plastic surgeon*, as some people are tempted to do when a friend who has had such an operation says "there's nothing to it!" ANY operation can be dangerous if performed by an unskilled quack.

OTHER CONDITIONS

I have mentioned the body disfigurements caused by clubfoot on page 678; congenital hip on page 677; pendulous breasts, page 777; severe

freckles, page 152; scarring from acne, page 154 and excess facial and body hair, page 150.

HEMORRHOIDS AND OTHER RECTAL TROUBLES

Hemorrhoids, or piles, are enlarged, dilated veins situated inside or just outside the rectum. They are somewhat like varicose veins in the legs, which I describe on page 757. They cause itching, discomfort, and pain, and are frequently accompanied by bleeding.

Aside from the fact that they are a nuisance, there are two important reasons for seeing a doctor promptly if you think you have hemorrhoids. The first is that they may be caused by something potentially serious. Usually, the cause is a local one, such as the hard, dry stools and straining which accompany constipation; this irritates the veins and slows the flow of blood (see page 748 for treatment of constipation). In pregnancy, the enlarged womb sometimes presses on the veins. However, the pressure can be caused by a disease in the liver or even the heart, or by a tumor or cancer. Rectal symptoms which you casually attribute to hemorrhoids may actually be caused by a curable cancer. This is one reason why it is important to see a doctor promptly if: (a) the enlarged vein inside the rectum pushes out and can be felt, (b) there is persistent aching, discomfort, pain, or itching in the rectal region, (c) you notice any bleeding from the rectum, either in the toilet bowl or on the toilet tissue after bowel movements.

The other reason for seeing a doctor promptly is that hemorrhoids should be treated before they cause complications that can be more than a nuisance. For example, the bleeding which appears to be slight can be so continuous that it causes anemia (see page 704). If a blood clot should form in the vein, it can be extremely painful. The veins can also become inflamed or infected and even rupture, causing a hemorrhage.

Don't use any advertised hemorrhoid "cure" that promises "instant relief from piles." These do not get at the cause of the difficulty, and often only make the symptoms worse. Cathartics and laxatives encourage constipation which is one of the main causes of hemorrhoids.

For *emergency* treatment of painful hemorrhoids, apply very cold water on tissues or a cloth directly to the anal area. Continue for five to ten minutes until the pain is allayed. Witch hazel can be employed in place of the cold water.

A hot tub bath morning and night may also help bring relief. A soothing rectal suppository is worth trying, e.g., Anusol or Surfacaine, but regular use of suppositories or ointments may prove irritating after a few

days. These are emergency measures to be used only until you can see your doctor, who will determine the exact cause of the hemorrhoids and suggest therapy.

Don't delay. Medical care is necessary not only for relief but also for safety. Many cases of hemorrhoids can be cured by nonsurgical methods. Others need an operation. It is not a serious one, although, of course, it must be performed by a competent surgeon.

RECTAL FISSURES

A rectal fissure—that is, a tear in the surface of the rectum—may accompany hemorrhoids. It is extremely painful. It may be caused by the straining and irritation resulting from constipation. If it does not heal promptly, see your doctor without delay. Rectal fissures can be a warning of some potentially serious ailment.

For emergency treatment, apply a soothing preparation, e.g., 2% Nupercaine ointment, which your pharmacist can provide. If you have constipation, try to relieve it by the methods I suggested on page 748.

PRURITUS ANI. (ANAL ITCHING)

This is a frequent and terribly annoying condition. Don't let false modesty stand in the way of having it cured. Doctors know how much distress it causes, and serious medical journals contain many articles discussing the best methods of relieving it.

It can be caused by worms, allergies, contact with irritating chemicals, and in many other ways. Sometimes emotional factors are responsible for the "nervous itching" that makes the patient scratch and irritate this sensitive area. Often the cause is not clear, and it takes some time for the doctor to find it, although he frequently can relieve the condition while he is seeking the cause. Be sure to give your doctor a chance to help you, because pruritus ani can result in infections or even interfere markedly with your general health by disturbing your sleep, or by making you tense and inefficient at work.

I discuss *pruritus vulvae*, or itching of the external female genitalia, on page 773.

ANAL FISTULA (FISTULO-IN-ANO)

Anal fistula is a most annoying ailment. Because of some disease condition, an opening develops inside the anal canal or rectum, and a small tunnel forms, which leads out to the skin or adjacent organs. Such a fistulous tract will permit the passage of fecal matter. This in itself is

unpleasant and painful because of the associated irritation and infection. In addition, the fistula may be the result of tuberculosis, actinomycosis, or other serious disease which also can destroy tissue. Sometimes, a rectal fistula results from an injury which may tear the rectal and anal tissues. This was frequent after prolonged childbirth in earlier centuries. A fistula might then form from the rectum into the vagina. Women maimed by this condition were frequently made invalids for life. Thanks to Dr. J. Marion Sims, a pioneer American gynecologist, an operation was devised to cure this terrible affliction.

When there is a discharge of any sort from the skin near the anal area, it should be mentioned to your doctor. It may be the beginning of an anal fistula, and exact diagnosis is required to establish the cause. On that basis, the doctor decides between medical and surgical therapy.

VARICOSE VEINS

Varicose veins are knotlike, twisting enlargements of the veins, usually just below the skin of the legs. They are the result of a breakdown of the valves which are found at regular intervals in the veins. It is through these valves that the blood flows back to the heart, after having been pumped to the extremities through the arteries. These valves divide the veins into sections, each valve forming a floor to support the blood above it. When a valve is faulty or degenerates, it cannot support the blood; when a number of valves in a surface vein break down, the weight of the column of blood becomes sufficient to distend it.

Varicose veins are seen most frequently in people whose work requires them to stand or to sit upright for long periods. A tendency toward valves that break down easily has been found to run in families. Increase in the internal or back pressure of the blood in the veins is also a strain on the valves. This can be caused by heavy lifting, abdominal tumors, and pregnancy. There may also be a connection between the endocrine glands and the valves, which tend to degenerate with age.

In addition to being unsightly, varicose veins usually cause some trouble eventually, generally in the form of dull, nagging aches and pains. The ankles may swell. The enlarged veins can become the site of an infection and, since the resistance of the surrounding tissue has decreased, a bruise or injury can become serious. The resulting varicose ulcers are not easy to clear up, especially in elderly people or diabetics; they may refuse to yield to medication, and require surgery, including skin grafting.

In mild cases, varicose veins can be handled adequately by such measures as: eliminating tight shoes and tight garters that restrict the

circulation; elevating the feet at intervals, and walking about occasionally instead of standing still for long periods. Sometimes wearing an elastic stocking or bandage for even part of the day will support a varicose vein and prevent it from becoming more distended. In severe cases, or with individuals to whom appearance is especially important, varicose veins can and should be eliminated. There are two ways in which this can be done. One method is *surgical*; the distended veins can be cut out, or else ligated (tied off). Afterward the blood will flow through other veins. The other method is *medical*; a fluid is injected into the varicose vein, causing it to harden, after which the blood can no longer flow through it and seeks a new course. The technique for injecting veins has been steadily improved during the hundred years since it was first attempted, and it is now perfectly safe in experienced hands. It is far simpler and quicker than surgery, and does not require the patient to be hospitalized or to stay away from work. The discomfort is slight, and unless there are a great many varicose veins or the patient is extremely nervous, one appointment is usually sufficient. (However, very large veins or other considerations may make the surgical treatment the better one.)

Varicose veins can safely be injected in old people, or in pregnant women if they would otherwise suffer pain for some months before childbirth. It should not be done in those rare cases where an infection of the blood vessels has injured the deep veins, because then the circulation in the leg would be interfered with. Of course, eliminating one or more varicose veins will not prevent other valves from breaking down and other varicose veins from developing. People who have to work in certain occupations, or who have a marked tendency toward faulty valves in the veins, are apt to have to contend repeatedly with this "Nuisance disease."

MOTION SICKNESS (Seasickness: Car Sickness)

Why seasickness (the term given to all forms of motion, or travel sickness) should be considered funny is a mystery to anyone who has ever suffered from it. There is probably nothing to compare with the misery its victims endure. Nausea, dizziness, headache, and vomiting can be so severe that prostration results; it has even been known to cause death. Fortunately, however, it usually vanishes quickly, leaving no ill effects.

The exact cause of seasickness is not fully understood. We do know that it is related to stimulation of the eye and the labyrinth of the ear (which is an organ of balance as well as of hearing, as I explain on

page 700). Psychological factors can also be important. You have probably suspected this from knowing someone who becomes violently seasick even before the ship sails.

There are countless ways to help ward off seasickness. Here are some useful suggestions; of course, it is not always possible to follow them all:

Be sure you are rested and in good condition; you should not have constipation.

Get plenty of fresh air; avoid stuffy rooms and unpleasant smells. Sit on deck with your eyes facing the ship, not the ocean.

Keep warm.

Get some exercise unless you become actively ill, in which case lying down with the head low often helps.

Don't overload your stomach. Small amounts of food, taken frequently, are usually better than a large meal.

Avoid rich, indigestible food.

Alcoholic beverages make some people feel less nervous, and in that way help to ward off seasickness. Also, iced creme de menthe and other pleasant-tasting drinks may help "settle the stomach." But, of course, alcoholic drinks in excess can also upset the digestion.

Don't take advertised remedies. They are usually useless, and in some cases even dangerous.

There are other things your doctor can do to help. Be sure to consult a doctor if you know from experience (or if you fear) that you are going to have motion sickness on a boat, car, train, or plane. He may give you a sedative such as phenobarbital for a few days before the journey. He may prescribe medicines such as Dramamine or Thorazine which have worked wonders in preventing or curing seasickness, and other types of motion sickness. These must not be taken except on a doctor's orders.

PILONIDAL SINUS

A pilonidal sinus or cyst is a congenital defect in the skin at the base of the spinal column, the "tailbone." It varies from a small dimple in the skin to a series of small tunnel-like openings. A pilonidal sinus rarely causes trouble until adolescence or later when it may become acutely or chronically inflamed. If trouble persists, it must be excised. The operation is a fairly extensive one because surgeons have learned that unless every bit of abnormal tissue is cut away, the condition recurs.

Problems of Women

YOU MAY WONDER why I should write a chapter dealing specifically with women's problems. "Haven't you covered the subject in your chapters on pregnancy, childbirth, and the period that follows it, and in discussing the glands, the skin, adolescence, marriage, and so on?" you may ask.

I have two main reasons for writing this chapter. In the first place, the childbearing organs, the remarkable functions which enable them to play the major role in bringing new life into the world, are an integral part of women—when they are not bearing children as well as when they are. Discussing them solely in relation to maternity is not enough. In the second place, certain physical and emotional problems persist in women because of their status in the past, and because of the fact that many women are housewives. The very nature of this work has, for example, made it extremely difficult to compile statistics and conduct research into its "occupational disorders," which afflict many women.

ARE WOMEN PEOPLE?

Undoubtedly you will laugh at such a question. Yet less than a hundred years ago it was being hotly debated by a small group of the most advanced thinkers in the most enlightened countries. Everyone else took it for granted that women, although extremely spiritual, were mentally and physically quite inferior to men. In addition, they were almost universally regarded as being so fragile morally that one unfortunate sex experience might shatter a woman's life permanently. When my grandmother was a girl, American wives were not permitted to own or inherit property, sign contracts, keep their own wages if they worked, or have any rights to their own children. A father could give his children away for adoption without even consulting the mother who bore them. In short, a woman's legal position was similar to that of a minor child, an imbecile, or a slave—although the law did provide

that a husband could not beat his wife with a stick larger around than a thumb, without, however, specifying exactly how large a thumb might be!

The church regarded women as morally inferior, on the grounds that Eve was responsible for the fall of man. Society and the law generally assumed that woman had been endowed with less strength and intelligence than man, so that all her energies could be devoted to childbearing. Since the earliest times, this tendency to regard women as little more than instruments of reproduction helped make the sex "inferior." Primitive people, feeling that supernatural elements must be actively involved in the process of childbirth, surrounded the child-bearing sex with superstition and taboos.

The fact that women menstruate seemed to indicate their close connection with supernatural forces. Menstruation involved a discharge of blood, which itself was surrounded by superstition, fear, and horror. Traces of these emotions still persist today. But more important was the fact that menstruation is of a cyclical nature, similar to the period of time involved in the waxing and waning of the moon. It was called the lunar sickness, and seemed to prove conclusively that women, unlike men, were acted upon regularly by forces outside the world.

Among civilized as well as uncivilized peoples, menstruation was regarded as, at the least, dangerous and unclean. Many laws made outcasts or pariahs of menstruating women, and they were required to go through rituals of purification before being considered fit to resume their place in society. They were taboo not only as far as sex was concerned, but had to refrain from ordinary activities because it was feared that their touch would bring disaster. As the great naturalist Pliny, who lived in the first century after Christ, put it, menstruating women "blighted crops, blasted gardens, killed seedlings, brought down fruit from the trees, killed bees, caused mares to miscarry. If they touched wine, it turned to vinegar; milk became sour." Is it any wonder that such "creatures" were put in an inferior position!

The advent of manhood was almost invariably welcomed with ceremonial rites which, though strenuous or unpleasant to the boy in some societies, were nevertheless great events accompanied by honors and privileges. The coming of womanhood, however, was not a cause for rejoicing. Certain groups had a grim method of "welcoming" a girl into maturity. At the time of her first menstruation, the girl's mother would slap her face and say, "Remember, now you are a woman."

Less than seventy-five years ago, doctors almost universally agreed that menstruation was an illness. Because of it, women were incapable of sustained physical or mental efforts—especially mental efforts, since menstruation was regarded as a "temporary insanity."

Some of these attitudes persist today, although often in an unconscious manner. My wife tells me that there are still many women who avoid touching a flower when they are menstruating because they are sure it will promptly fade. I am constantly astonished by the lengths to which even well-educated women will go in order to avoid saying the word menstruation. They call it "the curse," "the cramps," "falling off the roof," or "my periods." Even today, few women are entirely free from completely illogical attitudes towards menstruation. Many of these arose before or during adolescence, as I explain on page 445. There is no doubt that these attitudes account for many of the menstrual difficulties which are the most common and the most important of the genital disorders of women.

MENSTRUAL DISORDERS

Menstruation is a normal physiological function, which I describe fully on page 98. From the time a girl reaches the childbearing age, the lining of the womb disintegrates at regular intervals, unless she is pregnant, and is discharged in a flow of blood. Girls begin to menstruate at the age of puberty, usually when they are from twelve to fourteen years old. They continue until they reach the end of their childbearing years, usually when they are in their forties. The period when menstruation ceases is called the menopause, the climacteric, or "change of life."

At first the periods may be irregular, but once established they continue at regular intervals until the menopause, when they may again become irregular. Many women menstruate every 28 days. However, it is entirely normal to have periods at intervals of from 21 to 35 days. Every woman usually has a fairly definite rhythm.

Menstruation generally lasts from three to seven days. The average amount of blood lost is about three ounces. However, it is difficult for a woman to estimate this. The number of pads or tampons which she uses may depend less on actual need than upon considerations of personal daintiness. However, the amount tends to remain about the same during each menstrual period, usually diminishing after the first day or two. Its quantity is no indication of "womanliness." A woman may not menstruate at all, even though she is a completely feminine person.

As I explain in the chapter on Adolescence (page 445), the normal, healthy woman experiences no difficulties, aside from the inconvenience, during her menstrual periods.

Menstrual disorders such as pain, irregularity, excessive flow, and the absence of menstruation are not diseases in themselves, but are symptoms that something is wrong.

ABSENCE OF MENSTRUATION (AMENORRHEA)

The term *primary amenorrhea* is used if menstruation has not occurred, although the age of puberty has been reached. If it begins and then ceases, it is called *secondary amenorrhea*. Secondary amenorrhea is, of course, normal during pregnancy and often while the mother is nursing. It is quite apt to occur sporadically in the first and last months of a woman's childbearing years.

In rare cases, *primary amenorrhea* is caused by malformed or underdeveloped female organs. For example, the hymen (see Illustration 14-1, page 295) may completely block the vagina, causing retention of the menstrual blood. It may be due to glandular disorders, in which case it can often be cured or at least partially corrected by taking the proper hormones—but *never without a doctor's prescription*. Primary and secondary amenorrhea can be caused by general poor health, a change in climate or living conditions, and by emotional factors such as a shock or the fear or hope of being pregnant.

Scanty menstruation, menstrual flow which may be so slight as to amount to little more than "staining," sometimes results from the same causes. It is frequently due to anemia (see page 703).

EXCESSIVE MENSTRUATION (MENORRHAGIA)

This means an exceptional amount of menstrual flow at the regular periods. The term *irregular endometrial shedding* is used for "extra" menstrual periods. It is not easy to describe the amount of menstrual flow that constitutes menorrhagia. However, if ordinary pads do not afford protection, or *if the menstrual blood forms into large clots*, be sure to consult a doctor.

Tumors, polyps, cancers, inflammations, and certain diseases such as rheumatic fever can cause excessive bleeding. It can also be due to disorders of the glands whose hormones set off the process of shedding. Abnormalities of the organs may be responsible. Emotional factors frequently cause excessive menstruation.

A pelvic examination so thorough that it sometimes requires an anesthetic may be necessary to discover the cause of this disorder. The uterus is scraped and the scrapings examined. This latter procedure is called curettage, and will sometimes correct excessive bleeding.

IRREGULAR MENSTRUATION

During her childbearing years, menstruation usually occurs at definite intervals in each woman, starting almost exactly the same number of days apart. Irregularity may be due to a harmless change in nature's timing, which will correct itself spontaneously, or to changes in climate or living conditions, or to emotional factors. On the other hand, it may result from a disease in some other part of the body, such as the thyroid gland, which should be diagnosed and treated as soon as possible. It may be caused by a tumor of the womb or the ovaries. Most important of all, bleeding between periods can be a warning of cancer (see page 625). *It should always be reported immediately to a doctor.*

I am surprised by the number of women patients who do not know the dates of their periods, or the number of days in their menstrual cycles. If you have not passed the menopause, make a habit of marking on your calendar the start and end of your current period, and the expected date for the arrival of the next one. This will be extremely useful in determining your fertile period (see page 312) in case you wish either to facilitate conception or to avoid becoming pregnant. A menstrual calendar will be a convenience in planning your social life in such a way that you will not arrange a beach picnic or have to prepare a big dinner party on the day or days when excessive flow or discomfort might be anticipated. And it will enable you to become aware immediately of any irregularity or bleeding between periods.

PAINFUL MENSTRUATION (DYSMENORRHEA)

Many, if not most, women experience some discomfort at the onset of their menstrual periods. It is very difficult to draw a boundary between this and pain, since individual reactions vary tremendously. For practical purposes, I would say that a woman has dysmenorrhea if her menstrual cramps do not yield to aspirin or other mild pain-relievers, and if they prevent her from engaging in her work or social life.

Painful menstruation can be due to physical causes such as an inflammation or *endometriosis* (see page 776) which require treatment. In many instances it is associated with constipation, and vanishes when this condition is corrected. In the past, there was a tendency to believe that "cramps" were always due to some organic cause, usually the fact that the cervix, the mouth of the womb, was narrow and needed to be stretched, or dilated, or that the uterus itself was not in the proper position. Operations were frequently performed to correct this. In many cases, the pain was not relieved.

Today we believe that dysmenorrhea is often of the *primary* type,

that is, it cannot be accounted for by any organic condition. Such illnesses are called *functional*. We do not fully understand this, any more than we fully understand *colic* (see page 384), which causes a similar spasmodic kind of pain. But we do know that this kind of painful menstruation is almost never found in women who have had a number of children, is found only occasionally in married women, and occurs most often in virgins, especially young girls or women in certain types of occupations. In many cases there is conclusive evidence that it is caused by emotional factors.

I do *not* mean that this pain is imaginary. It is quite real, and can be relieved by medicines known as antispasmodics, analgesics, and sedatives.

INTERMENSTRUAL PAIN

Some women experience pain approximately midway between their periods, at the time of *ovulation* (see page 312). It may be accompanied by leukorrhea or a slight show of blood. As a rule, the pain is brief and moderate. Sometimes, however, when the ovum breaks through the wall of the ovary to start its journey toward the uterus, it may cause quite severe pain. When it is located in the right ovary, which lies near the appendix, there may be concern that appendicitis is developing. If the doctor knows the exact dates of the menstrual period, he can estimate the day of ovulation. On the basis of this information and a careful examination, together with certain laboratory tests, he can make the correct decision. This is very important because acute appendicitis (see page 654) requires an operation, whereas a ruptured egg sac is perfectly normal except in very rare instances. (The medical name for the ruptured egg container is *corpus hemorrhagicum*.)

PREMENSTRUAL DIFFICULTIES

Headache, depression, irritability, slight nausea, and puffiness of the abdomen, skin, and other parts of the body may precede menstruation. The reasons for premenstrual tension are not fully understood, but we know that they are associated with a disturbance of the salt balance, resulting in the accumulation of water in the tissues. Often these symptoms vanish with medication or a salt-free diet.

Menstrual disorders may not mean anything and, in fact, usually correct themselves. However, it is always important to consult a doctor about them. They may be warnings of some potentially dangerous condition. *I cannot remind you too often to be sure to consult a doctor if there is bleeding between periods or if it occurs after the menopause.*

In addition, many menstrual difficulties can be easily corrected, and it is unnecessary to be troubled by them.

It is usually possible for a doctor to rule out the possibility of potentially serious conditions fairly rapidly. To discover the exact cause of the symptoms, your doctor may refer you to a *gynecologist* who specializes in the diseases of the female organs. If he cannot find the cause of the disorder, it may be necessary to consult an *endocrinologist*, a doctor who specializes in conditions of the endocrine glands. If this specialist, too, cannot find what is wrong, a *psychiatrist* (see page 258) may discover that tensions and emotional problems are responsible.

Never attempt to treat menstrual disorders yourself. *Never take any medicine containing hormones.* Only a doctor can determine, after a thorough examination, whether you need additional hormones, what kind, and how much you require. The wrong kind or quantity can be very dangerous, as I explain on page 86.

Be sure to mention even mild menstrual disorders to your doctor at your regular checkup. He may be able to help you. In addition, it will give him information that will be valuable in case the condition should become aggravated.

THE MENOPAUSE

The childbearing period of a woman's life is limited to the years of ovulation and menstruation, that is, to her regular monthly cycles. At the end of this period, ovarian function declines and ceases, and menstruation ends.

The *average* American woman is from forty-seven to forty-nine years old at the menopause. Almost 75 per cent of all women reach the menopause while they are in their forties, and about 99 per cent between the ages of thirty-five and fifty-five. In general, the younger a woman is at the onset of her periods, the *menarche*, the older she will be when they cease. However, certain diseases and surgical operations can cause a premature menopause.

Several women have told me that they know of "change of life" babies. Strictly speaking, this is not possible. Once the follicles cease expelling eggs into the tubes, no pregnancy can take place. What might have happened was that the woman was undergoing the menopause, but the process was not completed and, although she was no longer menstruating regularly, she was still ovulating, or producing eggs. The length of time for the completion of the menopause varies in different women. As a rule, it takes from six months to three years. The menstrual flow may become smaller in amount, then irregular, and finally cease. The

time between periods may lengthen, until there may be a lapse of several months between them.

Some women complain because their childbearing years are more definitely limited than are those during which a man can become a father. In some cases, this extends well into the period of old age. But nature is indeed being very wise. Think for a moment how difficult it would be, for both the mother and the child who requires her care, if women could continue to have babies until extremely late in life!

Some women recognize this fact with gratitude. I was quite surprised when an extremely youthful-looking woman of thirty-nine told me with perfect sincerity that she was glad she was having the menopause. When I questioned her a little about her attitude, she said, "I've had my family, so why on earth should I want to keep on having menstrual periods? They're just a nuisance, and they won't stop me from being a year older each year. Menopause or no menopause, I'm going to be forty on my next birthday." I couldn't help thinking what a priceless gift this woman's attitude would prove to be to her three daughters.

I remember, too, a woman of fifty who burst into tears when she told me she was having the menopause, crying, "Now I can't ever have a baby!" This was a tragedy to her—but it had nothing to do with the menopause. The tragedy resulted from her thirty sterile years of marriage.

EMOTIONAL PROBLEMS OF THE MENOPAUSE

Unfortunately, many women have a tendency to attribute to the menopause every sign of the fact that they are no longer young. For them, it is a time to mourn over what might have been.

Making an unpleasant milestone of the menopause is responsible for many of the emotional disturbances associated with it. It is a good thing to look back in order to determine one's best path for the future. But it is devastating to look back for the sole purpose of brooding over failures and omissions! The desperate desire to make hay while the sun is still shining has driven many a woman into sexual adventures, real or imaginary, of a most immature kind. No matter how much we may want to go back, we cannot lead our lives over again.

It is *not* true that the childless woman or the woman who has never had sexual intercourse will wither or dry up or suffer unduly in some other way when she reaches the menopause. Being childless or abstinent can cause problems, but these can and have been solved by countless women who have led rich and happy lives. *Untold suffering has been caused by the many superstitions associated with this period of life:* that women are apt to lose their minds, or have nervous breakdowns, or be-

come unattractive, or lose the ability to enjoy and give enjoyment in sexual relations.

These superstitions have no foundation in fact. Some of the most famous women of our time, whose careers depend on their looks, personality, brains, and glamor, are well along in their forties and fifties. Many of them are proud to be grandmothers. A number of women find, to their surprise, that sexual intercourse is even more enjoyable than it was before the menopause. Since they can no longer become pregnant, their attitude toward sex is more relaxed, free of anxiety over its possible consequences. Premenstrual tensions and the discomforts of menstruation being over, they may feel better than they ever did. The expression "change of life" doesn't seem appropriate, when so few changes in living actually take place.

ADJUSTING TO THE MENOPAUSE

It is true that most women in their forties must make adjustments. A mother may find that her children are freeing themselves from dependence on her, just as she once had to cut the knot tying her to her own mother. This can be a painful process, as I point out on page 439. An unmarried woman must relinquish her dream that she can become a mother if she should yet marry.

But, fortunately, the maternal urge to create can be fulfilled in other ways than bearing children. Intellectual and artistic creation, and the "mothering" of ideas, causes, and individuals or groups, give it constructive and satisfying outlets. Maternal instincts often find new and rich forms of expression in a relationship with a son-in-law or daughter-in-law, and in the great joy of being a grandmother. Thus, a woman who has had her menopause can consider herself as entering a new and very important phase of life. Having put her childbearing years behind her, she can develop latent talents and new interests that will make her life fuller and more meaningful. If the rich years still ahead of her are used wisely, she can develop into an even more interesting and charming person.

"You're not a woman, so it's easy for you to talk that way!" you may be thinking when you read these lines. "It's not so easy for us to get over a lot of ideas that were put into our minds when we were very young, even though we realize they aren't true."

You are quite right. No matter how intelligent a woman may be in understanding the menopause, she can be influenced by the things she has heard, or half-heard, in the past. Whispers about "poor Aunt Ida, she had to be put away when she had the change." "Isn't it awful, the way Martha Brown's making a fool of herself with that scoundrel when

she has a lovely husband and family! She was such a nice woman, too, until she reached the dangerous age." "Mother can't help being cross and crying so much—it's her time of life." "They say that Mrs. Jones——"

Don't be ashamed of any fears, however absurd or vague, that may remain after you have read the facts about the menopause. The best way to dispel your fears and solve your problems is to discuss them with your doctor, or some qualified person he recommends (see page 258). Above all, do not depend on your friends to solve the problems which a doctor is far better qualified to handle.

PHYSICAL SYMPTOMS OF THE MENOPAUSE

I certainly do not mean to imply that all the disturbances associated with the menopause are caused by emotional attitudes. When ovulation ceases, certain hormones are no longer produced, and the whole "switch-board" of the endocrine gland system is temporarily "jangled." The endocrine glands affect the emotions, and the emotions affect the endocrine glands. Therefore we cannot say which comes first or is more directly responsible for the physical and emotional symptoms of the menopause.

Fortunately, however, these symptoms will usually vanish when the missing hormones are supplied artificially, that is, in tablets or injections. I repeat what I have said before: *These must be taken only with a doctor's prescription.* After the balance has once more been established by nature, the medication is no longer required.

I see no reason for prescribing hormones as a routine matter. In about 85 per cent of all women, menopausal symptoms cause no more than mild, occasional discomfort. This is a nuisance, like menstruation, but one which the average woman can put up with if she has some help from her sense of humor! On the other hand, there is no reason why a woman should suffer if she belongs to the 15 per cent that is really troubled by these symptoms.

I think there is a slight, but real, danger that the sane, modern attitudes toward the menopause may prevent some women from seeking help because they feel their symptoms are purely psychological or silly. One very sensible woman I know was secretly ashamed of herself for being disturbed. Always a light sleeper, she would awaken at night feeling hot, throw off her covers, and barely manage to get to sleep again before she awakened, chilled, to repeat the entire process. Her doctor could have given her some medicine to help her enjoy the good night's rest her busy days required.

These *vasomotor disturbances*, known as hot flashes or flushes, are the most common symptoms during the menopause. They are frequently its

first sign, and disappear gradually after the menstrual periods have ceased. They may be limited to the face and neck or extend to the entire body. They may be accompanied by an embarrassingly telltale flushing, or perspiration, or a sensation of "closeness of air" that makes a woman throw open the window on the coldest day. There may be headaches. The hands and feet may, surprisingly, be cold. Their frequency varies a great deal, some women experiencing only a few hot flashes during the entire period of the menopause, while others have many, every day and night.

Some women have other unpleasant physical symptoms, including fatigue, a nervous irritability of the bladder with a consequent need to urinate, and a kind of dizziness or giddiness, *vertigo*, occasionally associated with nausea or loss of appetite. The blood pressure may rise considerably.

It is most important to consult your doctor during this period in your life. Don't tell yourself to "grin and bear it." Let your doctor make this decision—*after* he has determined whether or not something should be done to relieve some symptom. He must also eliminate the possibility that a symptom is not due to the menopause at all, but to a potentially dangerous disease.

Always see your doctor immediately for excessive bleeding. It is true that this may be due to the menopause, but it *can* indicate cancer. There is no actual connection between cancer and the menopause, but women in this period of their lives have reached the age when cancer is apt to strike. For that reason, they must be particularly alert to its danger signals (see page 625). Always see a doctor immediately for bleeding that occurs after your monthly periods have ended. Don't decide it's "just an extra period." If it is, your doctor will tell you so; but if it isn't, you don't want to delay finding its cause.

LEUKORRHEA

Nonbloody vaginal discharges, usually called *leukorrhea* or "the whites," are almost as troublesome as menstrual disorders. They, too, are symptoms rather than diseases, and may be due to something relatively minor or potentially serious.

A certain amount of fluid is necessary to moisten the genitals. Sexual excitement, whether or not intercourse takes place, increases the lubricating fluid, as I explain on page 295. Many women have a mucuslike discharge at the time of ovulation (see page 312).

Some women are disturbed by even the slightest discharge, and make every effort to get rid of it by using antiseptic and astringent douches. I have issued several warnings against this practice in the course of this

book (see page 128). Douches administered under pressure, or consisting of anything except a little salt or vinegar, often increase the discharges they are intended to eliminate. This is because such douches may be irritating, or may alter the normally acid nature of the secretions, which inhibit the growth of troublesome bacteria.

The genitals need only to be kept clean by bathing and washing. However, the proper kind of douche will do no harm and may contribute to the feeling of personal daintiness. Always use a douche bag, rather than a bulb, and do not hang the bag so high that the douche is administered under pressure. Hold or hang it at arm's length. Use two quarts of warm water with four level teaspoonfuls of table salt, or two to three tablespoons of a good quality of ordinary vinegar. Wash the nozzle before douching, and *never* use one that anyone else has used, because germs can be spread in this way.

An *excessive* discharge can be due to any condition that causes inflammation or disturbs the circulation in the vagina or uterus. In other words, it can be due to practically any disease of the genital tract, including gonorrhea and syphilis, other infections, cancer, polyps, lacerations of the cervix which sometimes occur during childbirth, or the irritation caused by an ill-fitting pessary. Occasionally, it is due to some condition outside the genital tract, for example, to malnutrition, or even to pelvic congestion associated with heart disease. Surely you can see how important it is to discover and treat the *cause* of a vaginal discharge, and not merely to try to relieve the symptoms with home remedies. Always consult a doctor for persistent leukorrhea, or any discharge that is not colorless, or that is accompanied by itching or irritation.

Some women are reluctant to consult a doctor about leukorrhea. As one woman expressed it, "I was afraid he'd think I had a *reason* to be worried about a venereal disease." Let me reassure you. In the first place, doctors know that venereal diseases are only one of the many possible causes of a vaginal discharge. In the second place, we know that women (and men) can worry about venereal diseases without having a "reason" to do so. And finally, it is our duty to treat diseases of all kinds, and not to pass moral judgment. To us, the terrible thing about syphilis and gonorrhea is the fact that they cause untold suffering—which is needless because these diseases can be cured. *Be sure* to read pages 650 and 715 in which I discuss venereal diseases.

Leukorrhea is frequently caused by a one-celled microorganism known as *Trichomonas vaginalis*. This organism causes a yellowish discharge with an unpleasant odor, often accompanied by itching of the external genitals, and sometimes leads to a chronic inflammation of the cervix. By examining a drop of the vaginal discharge under the microscope, the doctor can identify the infecting organism.

We do not know where this protozoan comes from, although there are indications that it exists in the rectum, where it does no damage. If only for this reason, women should be careful to avoid contaminating the vagina with fecal material after a bowel movement.

It often requires patient treatment to cure **trichomonas vaginalis vaginitis**, which is the name for the condition caused by this organism. Unfortunately, it has a tendency to recur, especially during and just after menstruation. This is due to the fact that the menstrual blood lowers the acidity of the vagina, and thus encourages the growth of the *trichomonas vaginalis*. It is also possible for the husband to harbor the organism, and reinfect his wife.

Treatment usually consists in restoring the normal acidity of the vagina, which the germs themselves reduce. Your doctor may prescribe the following treatment: Use three tablespoonfuls of the purest household vinegar in two quarts of warm water, to be applied as a vaginal douche. If this simplest of remedies, when used once or twice a day, doesn't clear up the infection, then your doctor will use other types of medications. He may prescribe tablets or suppositories to be inserted into the vagina. As a rule, the treatments for leukorrhea are continued during the menstrual period.

Another, though not quite so common, cause of leukorrhea is the yeast known as *Monilia albicans*. It produces similar symptoms, and usually yields readily to medical treatment.

Nonspecific infections: these may be caused by some very ordinary kinds of germs, which sometimes produce leukorrhea. This type yields most readily to treatment, although occasionally it is necessary for the doctor to prescribe various medicines in tablets and douches.

The *cervix* may become inflamed by the same condition that causes leukorrhea, and also by injuries during childbirth and irritation of various kinds. **Chronic cervicitis** is usually cured by cauterization, which removes or destroys the inflamed area. It is not a painful procedure. An inflamed cervix should be treated promptly, because it is a fertile area for cancer.

Cervical polyps, a type of small tumor, should always be removed. They should then be examined under the microscope because they may be malignant, that is, cancerous. Although this is seldom the case, it is most important to discover it immediately so that the area around the polyps can be removed, to prevent future danger.

Atrophic vaginalis. Elderly women are very prone to have vaginal infections. This is due to the aging of the tissues. After the doctor has eliminated the possibility of cancer and other diseases which might cause the vaginal discharge, he can usually relieve the condition by treatment with vaginal suppositories containing the ovarian hormone, estrogen.

Pruritus vulvae or itching of the genitals is frequently caused by leucorrhea, and vanishes when it is corrected. However, it may also be due to irritation from the urine, especially that of diabetics, to skin diseases (see page 159) and to mechanical irritations such as chafing or nervous scratching of a very minor inflammation. The possibility of an *allergic reaction* (see page 739) should not be overlooked. Pruritus vulvae is most frequently found in women who are in their later years, because of changes which take place in the genital tissues during aging.

It is obviously important to discover and eliminate the cause of this symptom. It is also important to relieve it as quickly as possible, for itching can make life miserable. The external genitals should be kept clean and dry, and harsh soaps, rough materials, scratching, and rubbing must be avoided. Medicines like phenobarbital or other sedatives often greatly relieve the nervous tension which is caused by the itching and which in turn aggravates it. This will enable the patient to sleep soundly without unconsciously scratching herself during the night.

OTHER DISORDERS OF THE REPRODUCTIVE ORGANS

Infections of the ovaries, Fallopian tubes, and uterus were extremely common in the past. The overwhelming majority of them were caused by gonorrhea, puerperal, or childbed, fever, or tuberculosis. Today, these diseases no longer cause untold misery to women. However, the fact that any woman still suffers from them is a needless tragedy. Other types of infectious diseases which may attack these organs are also yielding to modern medicines.

Injuries usually resulting from pregnancy and childbirth, such as the following, have also been tremendously reduced by modern obstetrical methods. (See Chapter 17.)

Lacerations (or tears) of the perineum, vagina, and cervix may cause trouble if they do not heal properly. As a general rule, no treatment for laceration of the cervix is necessary unless there is inflammation or some other symptom. However, it is *most important* to have your doctor check this condition at your regular medical examinations, because early cancer of the cervix may present a similar appearance. *Vesico-vaginal fistula*, an opening between the bladder and the vagina, or *recto-vaginal fistula*, an opening leading from the rectum into the vagina, may be caused by lacerations. These should always be repaired by surgery.

Relaxed tissues or *muscular injuries* can cause *hernias* (see page 712). They can also cause a *cystocele*, a bulging of the bladder, due to the

weakness of the vaginal wall, or a *prolapse of the uterus*, in which the cervix is pushed far into the vagina, or a *displacement of the uterus*. If any of these conditions is severe, surgery may be necessary. Often, however, they can be treated by other means.

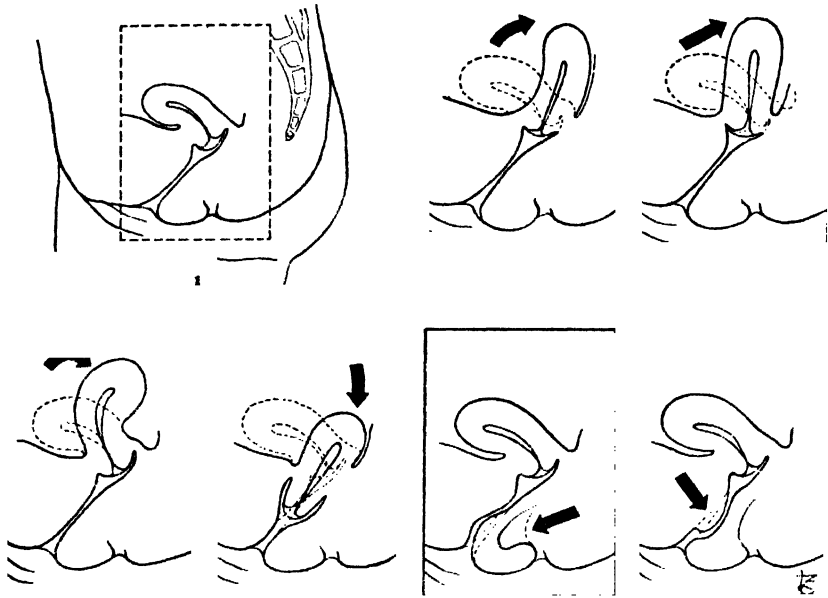


Illustration 36-1. POSITIONS OF THE UTERUS
AND VAGINA.

1. Usual position of the uterus. (Dotted outline indicates the area shown in the following pictures.) 2. Retrocession. The uterus sags backward. This seldom causes any difficulty. 3. Retroversion. The uterus tips backward. This seldom causes any difficulty. 4. Retroflexion. (More pronounced retroversion.) The top of the uterus bends back. This seldom causes any difficulty. 5. Prolapse. The uterus sinks into the vagina. 6. Rectocele. The rectum pushes into the wall of the vagina. (Normal position of vagina shown by dotted lines.) 7. Cystocele. Part of the bladder pushes into the wall of the vagina.

Operations for displacement of the uterus are performed far less frequently today than they were in the past. Because many women who had a misplaced uterus often suffered from dysmenorrhea, backache, and some complications of pregnancy, doctors hoped that correcting the position of the womb would cure their symptoms. Often the desired results were not obtained. In many cases, it became perfectly clear that the

misplaced uterus was not the cause of the painful symptoms. Backaches, for example, may be due to many causes, as I explain on page 671. I feel quite strongly that a woman should consult a specialist in gynecology before having an operation to restore her womb to its proper position.

HYSTERECTOMY

Hysterectomy means removal of the womb. Once removed, this organ cannot be replaced, and a woman without a uterus is not able to bear a child. The *unnecessary* removal of the womb is particularly tragic to women who want to have children, or may want to have them in the future.

Do I imply that hysterectomy is sometimes performed without sufficient cause? I do. We must face the facts squarely. They are proved by hospital records. Examination of the organs *after* operations have clearly indicated that, in a number of cases, their condition did not justify their removal.

"This is deplorable!" you will say. "Why is it permitted?" There are several reasons.

1. Doctors differ in their opinions about the need for operating upon benign, or noncancerous tumors, in the wall of the uterus.

2. Unfortunately, some doctors are unduly hopeful that removing the womb will cure symptoms such as backache and pelvic pain.

3. It is very difficult to determine whether or not the uterus should be removed when there is a large tumor. These growths cannot be visualized by x-ray. There are no simple laboratory tests to indicate whether or not a fibroid tumor is large enough to necessitate removal of the womb. The diagnosis depends almost entirely upon the doctor's impression as he examines the womb during his pelvic examination. In some cases, it depends on his ability to decide, during an operation, whether or not the growth can be removed without removing the uterus as well. A small fibroid tumor, polyp, or cyst, which is a hollow growth containing fluid, can be removed without taking out the entire womb.

It should be obvious that some doctors have more skill and experience than others in making a diagnosis of this kind. A specialist who has devoted the major portion of his time to this type of complaint may be able to determine with accuracy that a hysterectomy is not essential, whereas a doctor without a corresponding amount of experience may feel that he must suggest one.

Therefore, I recommend, even more strongly than I would for an operation on a displaced uterus, *that a hysterectomy never be performed unless two physicians agree on the need for it.* One should be your family

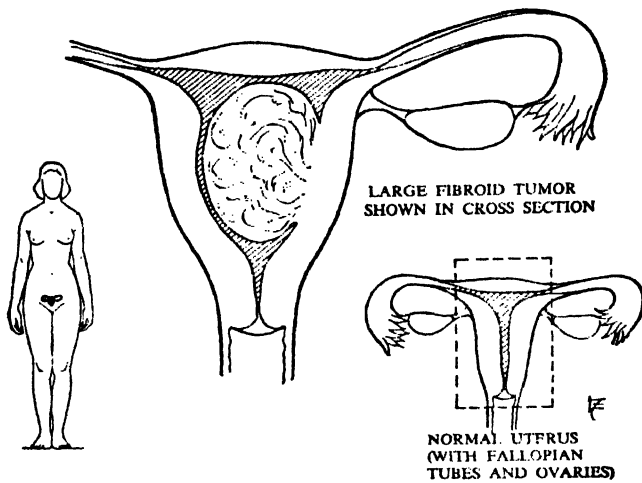


Illustration 36-2. FIBROID TUMOR.

doctor, the other a certified specialist in gynecology (see page 536). If such a specialist is not available in your community, there will be one in the nearest large city, medical center, or medical school. Your family doctor can make arrangements for an examination and an opinion by a specialist in gynecology.

When I stress this matter, it is *not* because I consider a hysterectomy "a terrible operation," from which a woman will emerge prematurely aged or a semi-invalid. Quite the contrary! In almost all cases, the Fallopian tubes and the ovaries, or at least a part of the ovaries, are not removed, and the glandular function will continue even though the woman ceases to have her menstrual periods. If the ovaries do have to be entirely removed, the patient can be given hormones to help her through this artificial menopause. In women who no longer wish to have children, removal of the uterus should not inflict any severe emotional injury. But, *hysterectomy is a major operation*. Because all major operations involve some risk—in addition to time, money, and discomfort—they should never be undertaken unless they are absolutely necessary.

Endometriosis. Many unnecessary hysterectomies have been performed for cases of endometriosis. In this condition, the cells lining the inside of the uterus "run wild." Inside of being *on* the walls of the womb, they may also appear *in* or outside these walls, and even in other tissues as well. Endometriosis may cause sterility, pain, and excessive menstruation. Surgical treatment, but not necessarily a hysterectomy, may be required in some cases.

THE BREASTS

The breasts or mammary glands are made up of glandular tissue which is arranged in a complicated pattern of lobes, somewhat in the form of a wagon wheel. The milk ducts lead into the nipple, which is at the center or hub of this wheel. When the muscles of the nipple contract, it becomes hard and smaller. In some women, it is only slightly erectile or may be actually *depressed*. Fatty tissue fills out the breast, making it round and smooth. The amount of this tissue varies considerably in different women.

Many women are unhappy because their breasts are too large or small for the prevailing fashion. Not much can be done to alter nature's design in this respect. Certain exercises (see illustration 36-3) will develop the muscles in the vicinity of the breasts, making them seem larger and firmer. Losing weight will often get rid of some of the fat and make the breasts smaller. Extremely large breasts or too early development of the breasts can be the sign of a glandular or other disorder, which requires the help of a doctor (see page 445). If the breasts are tremendous, an operation can be performed to remove the excess tissue.

Breasts may be firm or high, or flabby and pendulous. The latter condition is not always due to having worn constricting brassieres. In fact, the shape of the breasts appears in many cases to be inherited.

For flabby breasts, as for breasts that are "too" large or "too" small, a well-fitted brassiere can do wonders. It can be slightly padded to make small breasts seem larger. However, never wear a brassiere that actually constricts the breasts. It should give support and protection without pressure, and there should be no irritating folds or seams.

The breasts should be kept clean and dry, especially if they are large and flabby, in order to prevent chafing, itching, and other skin complaints.

See page 374 for care of the breasts in nursing mothers.

The most serious disorder of the breasts is cancer, which I discuss fully on page 626.

Various forms of *mastitis* (inflammation of the breast) are quite common. They may follow childbirth or an injury. Mastitis may become chronic. Chronic interstitial mastitis and chronic cystic mastitis, which are the chief types of breast inflammation, are often confused with cancer. They are usually not serious, although they can be quite painful, especially before the menstrual periods. Never attempt any home treatment of mastitis except to give the breasts proper support and protection.

Cysts and *tumors* occur fairly frequently in the breasts, and *abscesses* may result from infections, for example, from germs entering through a cracked nipple after childbirth.

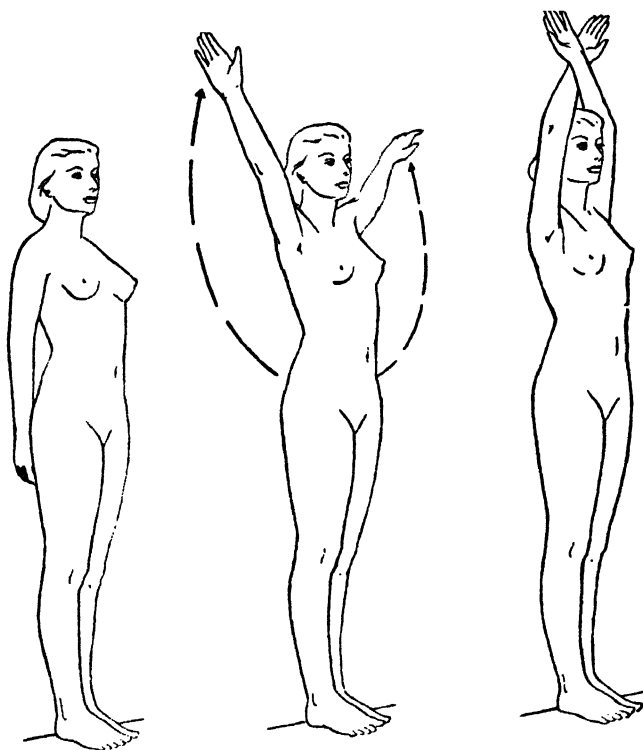


Illustration 36-3. EXERCISE TO IMPROVE THE BUST.

1. Stand with arms at side and with heels, calves, buttocks, shoulders, and back of head touching the wall. 2. While inhaling slowly, raise arms slowly and steadily against your own resistance, until they cross above the head as much as possible without substantially bending the elbows. 3. Still touching the wall, keep arms stiff and exhale as you slowly bring them back to your sides.

Always consult a doctor for any lump, pain, injury, or change in the breast, or for any discharge from the nipple.

SKIN AND HAIR

I tell about how to care for the skin and hair and the various diseases which affect them, such as acne, growths, and dandruff, as well as cosmetics, beauty aids, dyeing, excess body hair, and permanent waving, on pages 148 to 168.

“WOMAN’S WORK”

Housework has always been the Cinderella in the family of useful occupations, taken for granted, ignored, or looked down upon. In the past, the average woman in her thirties looked, and felt, old. But nobody considered it worthwhile to determine whether or not her daily tasks had anything to do with this, and if so, whether it could be prevented.

Modern laborsaving devices have brought about a revolution in housework but, unfortunately, in a hit-or-miss manner. Not until very recently has a beginning been made in studying housework in relation to health, including, for example, the designing of homes, furniture, and equipment.

The hazards of housework do not, naturally, compare with those of certain other occupations such as coal mining. However, even today housework is the cause of injuries and ill health which could often be avoided. Because of the difficulty of collecting statistics, research in this field is necessarily slow.

The form of bursitis (see page 675) known as “housemaid’s knee” is probably the only occupational disease of housework that comes to your mind. It occurs less frequently today than it did when it was customary to have wooden floors and to scrub them by getting down on one’s knees. In England, during and following World War II, when women had to carry heavy market bags and wait for hours in line to buy provisions, the housewife’s carrying shoulder was afflicted with fibrositis, a form of rheumatism due to inflammation of the fibrous tissue around the joints.

The many new soaps, detergents, and other products so excellent for cleaning have caused a condition of the hands which some doctors speak of as “housewives’ dermatitis.” But, in the main, housework is not responsible in so *direct* a manner for physical disorders.

Through the cooperation of women physicians in many countries, the American Medical Women’s Association has conducted investigations into the diseases and ailments which afflict women who do housework. A British study of a group of housewives revealed a tremendous number of women who had foot trouble, colds, headaches, varicose veins, depressions, and many other “nuisance ailments” (see Chapter 35). Those who had to do housework in addition to an outside job were found to have the poorest health. Since no similar studies are available for women who do not do housework, or even for women as a whole, the figures compiled do not prove that housework is to blame; but they do indicate that most housewives are plagued by one or more ailments.

Many housewives have trouble with their reproductive organs, often because they have to work too soon and too hard after giving birth to a

baby. Others injure themselves lifting and carrying things that are too heavy for them. Women suffering from a chronic illness or a disabling condition frequently make themselves worse by doing housework. In this connection, I want to urge all such women with chronic illnesses to learn about organizations such as the American Heart Association, the National Tuberculosis Association, and so on (see page 587), which can provide useful help and advice to supplement your doctor's care. The Disabled Homemaker's Research Program of New York University-Bellevue Medical Center, 400 East 34th Street, New York City 16, is doing valuable work in this field.

A great many things which housewives can do to protect their health have been discussed throughout this book, especially in the chapters dealing with general care of the body, care of the individual parts of the body, diet, pregnancy and childbirth, housing and health, home nursing, and so on. Here I shall present some suggestions relating specifically to housework. I hope they will help you to solve your own problems, but I would be even more pleased if they stimulate women, as a sex, to work out solutions through clubs and other organizations.

1. *Make a "job study" of your work.* Most women are taught to do housework by their mothers, with the result that old-fashioned methods tend to linger on longer than they do, for example, in modern factories. Think over what you do, and why and how you do it. Do you really need to dry dishes in these days of new soaps and detergents and plenty of hot water? Perhaps if you had two dish-racks and a spray attachment on your tap you could rinse all your dishes and let them drain dry, a very sanitary method, by the way. Do you have to iron ruffled curtains or to stretch lace ones on frames? Nylon or paper curtains can save a great deal of time and energy. Do you exhaust yourself twice a year doing a big spring and fall cleaning because your mother used to, when you, personally, would rather do a part of it each week?

Give special thought to the routines you find distasteful or tiring, and see how many of them you can eliminate or modify. Do this with everything your husband and children consider unnecessary. Consider your efficiency at specific tasks. Do you walk more than you need? How many unnecessary motions do you make? If you can manage to cut down strain and fatigue by only infinitesimal amounts here and there, it will make an appreciable difference as the days and weeks go by.

2. *Consider yourself in relation to your work.* Are you taller or shorter, weaker or stronger than the *average woman*? It was such a mathematically averaged "she" that designers had in mind when they decided on the height and weight of household objects. Reaching and stooping are often unnecessary evils. Even so simple an object as a broom should be light enough not to tire a woman who is not muscular, and

large and heavy enough to enable an unusually strong one to get through the job rapidly. Whenever you buy something new, from a stove or sink to an ironing board, find out what can be done to make it the proper height for you. If you have to make do with what you have, perhaps you can put something under the dishpan in the sink to raise it to the proper height, or sit on a high stool if you are so short you have to stretch. Perhaps you can cut a piece off the legs of your ironing board, or raise them in some way. Is there a chair so heavy you strain yourself each time you clean the rug under it? Perhaps casters will solve the problem. The man in your household can probably help you.

There are some household tasks you may not be large or strong enough to tackle by yourself. I know one frail little lady who tortured herself every week turning a huge mattress. Her husband, who had a weak heart, had hired someone to empty the trash barrels, but it never occurred to her to get the hired man to turn the mattress. And I will never forget a young mother who weighed only 95 pounds and who told me she couldn't imagine what was wrong with her back—until I informed her that nature had not intended her to carry around her 30-pound baby for many hours each day! Fortunately her back improved rapidly after she adopted the habit of moving him around in a baby

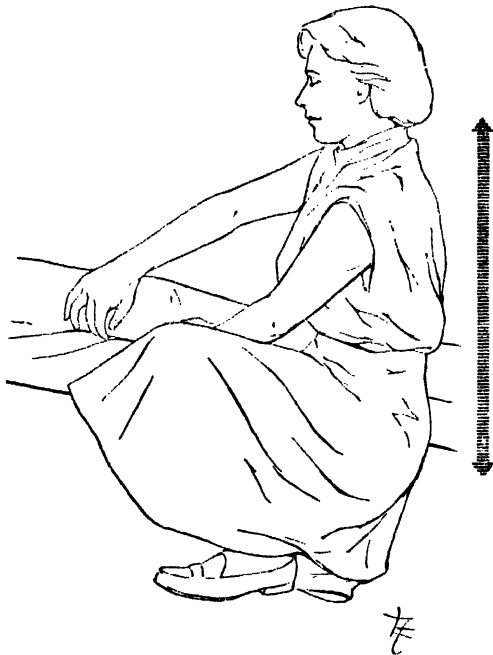


Illustration 36-4. STOOPING BY BENDING KNEES.

carriage, and lifted him, when it was absolutely necessary, by bending her knees rather than her back (see illustration). Always keep your feet flat on the floor and bend your knees rather than your back, to lift.

Once the tasks with which one needs help are recognized and listed, it is usually possible to get assistance. The male of the household probably would not object to doing some of them if they could be organized at convenient times for him. Or two housewives who are neighbors can sometimes pool their efforts.

3. *Become posture-wise.* Poor posture is responsible for many of the strains and injuries, to say nothing of the aches and pains, from which housewives suffer. Illustrations 36-5 and 36-6 show how to hold your back while working at a table, and lifting. Be sure to study the illustrations in Chapter 1, pages 9 and 10, which show the correct and the incorrect

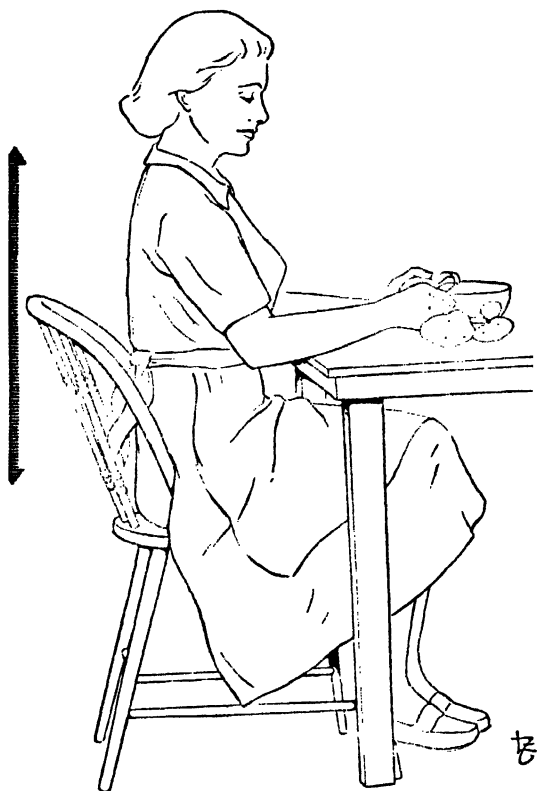


Illustration 36-5. WORKING AT A TABLE.

Whenever possible, avoid strain and fatigue by working at a table of the proper height. Bend forward from the hips rather than from the shoulders.

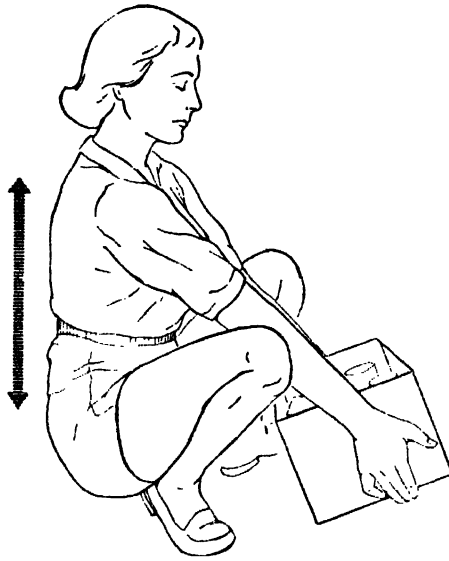


Illustration 36-6. LIFTING.

Bend the knees and use the leg muscles when lifting, to avoid straining the back.

way to stand and to sit. When you do the dishes, keep your weight evenly distributed on both feet and your toes slightly turned in. If you do not sit down while ironing, keep your back straight and your abdomen in; do not hunch up your shoulders. When sweeping, put one foot forward if you reach out in order to get under a table or into a corner. Avoid sudden twisting or movements while you are off balance.

Exercise to strengthen your back are shown on page 12.

Posture begins with the feet. The average housewife spends from 80 to 90 per cent of her working day, which lasts from nine to twelve hours, on her feet. Be sure to read what I have to say on the care of the feet (page 143). Nothing could be less economical than saving old shoes with run-over heels to wear in the house.

4. *Take care of your hands.* The new cleansing products are much better than the old-fashioned ones our mothers had to use. They save time and trouble, mainly because of the speed with which they dissolve grease. Unfortunately, they also dissolve the natural oil or fat needed to lubricate the skin. Dry-cleaning fluids, turpentine, gasoline, and other paint removers also have this disadvantage. Fruit and vegetable juices can cause irritation. As a result, many women suffer from skin diseases and infections resulting from minor inflammations.



Illustration 36-7. IRONING WHILE SEATED.

If you don't like to wear rubber gloves, observe the following suggestions: Discover how much soap or detergent is necessary for efficiency, and save money as well as possible skin trouble by not using too much in your dish water. Don't have the water too hot, as this, too, removes the natural oils and causes irritation. Dry your hands thoroughly, and use a lotion, especially in cold or dry weather. Use an oily lotion before going to bed (see page 153). During winter months, and in desert areas throughout the year, an air humidifier in the home (see page 5) will help keep your skin from getting too dry. Be careful of the skin under your rings, always drying it thoroughly and being on

the alert for sores or inflammation that start there. Never neglect cuts or sores of any kind (see page 484). A rubber "finger" or glove, obtained from your druggist, should be worn to protect any injuries.

THE HOUSEWORK BLUES

No matter how efficiently it is organized, housework retains some unattractive features. I feel certain that this fact accounts, at least in part, for the headaches from which housewives frequently suffer.

"No matter how thin you slice it, it's still housework!" "It's never done—and when it is, it doesn't *stay* done." "No matter how dull a man's job is, he at least has the satisfaction of earning money for the family."

In my opinion, these complaints are justified. Although housework is essential, it is not productive in a certain sense of the word. And it is seldom possible, especially if there are children, to limit its hours.

The wife and mother who has an outside job carries a heavy burden. Even with the most cooperative husband, she usually assumes the responsibility for the home and children, if only because of her training and experience.

A young girl once told me that she thought Freud was on the wrong track when he said women were envious of men for sexual reasons. "If it weren't for all the chores I have to do, I wouldn't envy my brother the least little bit," she said, only half-jokingly. "We both go to work and come home at the same time, but I have to help with supper and the dishes, I have to wash and press and mend my clothes, shampoo and set my hair, manicure my nails, and do a little shopping for the family during my lunch hour. The only thing *he* has to do is shave, and he makes such a production out of it that I feel I ought to do it for him!"

Of course the girl's brother countered with an excellent set of arguments, which do not belong in this chapter. The fact that men, too, have difficulties may help women to be philosophical, but it won't make housework attractive.

Here are some suggestions for minimizing its worst features.

Try to get a day off, or part of a day off, every week. As you recall, I spoke about the importance of having time off from one's job (see page 6). The five-day week or even the six-day week is impossible for most housewives, but women can usually arrange for a free morning or afternoon. Ideally, this should come at the same time every week, preferably not over the week end when the family should be together.

I realize it is not easy to do this. Sometimes it may seem to be more trouble than it is worth but if it is at all possible, it will be very good for you. Do something that is a complete change—go to a movie, or window shopping, or to a church or club meeting, or for a visit. Perhaps you and

a neighbor can alternate in caring for the children, or pool your resources to engage a sitter. Plan an easy-to-prepare supper and see whether some other member of the family can fix and serve it. Most families will cooperate in giving mother her day off if she shows her appreciation.

Arrange to get some rest during each day. Again, this will take some planning and may seem scarcely worth the trouble, but it will repay your efforts. You will feel better physically and emotionally, and be able to accomplish more in less time, if you take a complete break both morning and afternoon, preferably one fairly long one if possible, but at least two fifteen minute periods to rest and relax, with your feet up and an imaginary "Do Not Disturb" sign out.

Organize your housework in such a way as to break its monotony. Many chores must be attended to every day, but it is usually possible to put some of them on a bi-weekly or even a weekly basis. An athletic young wife in our neighborhood worked out the following system: Three mornings a week she got into a sweat shirt and dungarees and did all the work that, as she put it, could come under the heading of exercise. "I don't kid myself it's tennis," she said. "But by going at things hard and fast, and then taking a rest and a shower, I at least feel as though I've had a good workout." Of course this method is not suitable for everybody, but the idea underlying it is sound.

Here are some ways of getting over the "*being-a-woman blues*":

Talk to a good and trustworthy friend, that is, anyone who serves in that capacity, including a relative, your clergyman, or a neighbor. Talk about your problems, or just talk. *But establish communication with someone.* That is one of the great advantages of having a telephone, especially in the suburbs or in rural areas. Some women find they can work off the blues by *doing something active*, anything from taking a walk or playing golf to cleaning out the closet. If a feeling of inadequacy accompanies your blues, or, perhaps unconsciously, is the cause of them, it will help to do *something useful or creative*. Having done something for someone else is a wonderful restorative for the faith in yourself that has temporarily deserted you. So is the satisfaction of creating something, which may be a drawing, a good letter, a new dress for your daughter's favorite doll, or a cake with fancy icing. On the other hand, perhaps you should pamper yourself, as you would anyone else who was unhappy. In that case, *do something frivolous*. Buy yourself those gloves you don't absolutely need, or read a light novel instead of the good book you "ought" to read, or indulge yourself, just this once, in a fattening ice cream soda in an attractive place.

Maybe a medicine will help you. Perhaps a mild stimulant is what

you need—a good cup of tea or coffee, a cola drink. An aspirin, Bufferin, or Empirin tablet may do away with that nagging little headache you have been too blue to notice. There are also new *medicines which your doctor may recommend*.

Don't say to yourself that you ought not to get the blues. Every normal person is susceptible to the stresses and strains of living. Try to find out what is causing your blue mood. It often helps simply to know that it is the weather, or the fact that your menstrual period is due, or that you are tired. Then do something about it if you can. If you can't do it alone, enlist the aid of your doctor or someone he recommends.

Most important of all, accept the fact that you are human, which means that you are remarkably sensitive and reactive. In other words, you are apt to become depressed—but fortunately, it won't last. In the beautiful words of the Thirteenth Psalm, "Weeping may endure for a night, but joy cometh in the morning."

The Later Years

THIS CHAPTER is written for readers of all ages. Naturally, the problems of aging are of little or no immediate concern to young people. But almost everyone has parents, grandparents, uncles, and aunts who are beginning to get along in years. If you are one of my younger readers, you can learn how to make the later years good ones for the old people you love—and they will be grateful for your knowledge of their special problems. It is a source of abiding satisfaction to me that my mother used to say, when she was seventy-five, that she felt better than at any time during the previous forty years. Then, too, by understanding the needs of the aged, we can unconsciously and gracefully prepare for the fullest enjoyment of our own geriatric period. The best way to rob old age of its terrors is by seeing elderly people who are well and happy!

Most prudent folks start making plans for their future financial security at an early age. I hope that you will also give some thought to the kind of investments that will pay off in physical and emotional health. No matter how old you are, you'll want to continue this. Even if you have passed the mark of the Biblical three-score years and ten, you won't want to fold your hands and say, "I have reached my goal." As a scientific article I read recently pointed out, it is not enough to add years to life; we also want to add life to years.

Remarkable progress has been made in adding years to life. The average American of today lives twice as long as he would had he been alive when this country was founded, and practically twice as long as does the average of the world's population. (This is based on figures compiled shortly before World War II.)

This tremendous increase in life expectancy is due in great part to the fact that such diseases as cholera, typhoid fever, smallpox, diphtheria, and yellow fever have been practically eliminated. The greatest reduction in mortality has been in infants. However, the mortality of people *over seventy-five* has been reduced by one-fifth during the first half of this century. According to present figures, the average white, male American who has today reached the age of sixty-five will live for another dozen years, and the average woman will live another fourteen. These

estimates are constantly being revised upward, so that before those years actually pass, life expectancy will be longer than it is at present.

HOW OLD IS OLD?

Everyone has an answer to this question. "An old person is anybody who is ten to twenty years older than you are." "The process of aging begins at birth." "It all depends on what you're doing; a combat pilot, a baseball player and a prize fighter are old at thirty, while a scientist is young at fifty." "You're as old as you feel, or as old as you look."

Like most doctors, I am frequently impressed by the great mental and physical differences between patients of the same age. However, since it is convenient to set some sort of boundary, the age of sixty-five is usually chosen. Personally, I rather like Victor Hugo's remark that fifty is the youth of old age, because it shows an awareness of the fact that old age does not arrive suddenly. Like other periods, it depends on what went before. For this reason *gerontology*, which is the science of the process of aging, does not actually limit its studies to a single group. This science has shown us that, in the later years, as in the others, a great deal can be done to correct the errors and omissions of the past. The medical specialty concerned with diseases of the aged is called *geriatrics*.

Medical science can help to add years to life and life to years. But—perhaps more than at any other time—the part played by the individual is a vital one. That is why I am so eager to impress on you the fact that it's never too early or too late to plan for the later years.

ASSETS AND LIABILITIES

Many of us are accustomed to think only of the limitations and liabilities of old age; we tend to overlook the physical, mental, and emotional assets of this period.

MENTAL ASSETS

I will start with these because here the ledger shows many assets and very few liabilities. It is encouraging to know that the mind, at least, does not wear out from use or even "overuse." We heard a great deal about "brain fatigue" and "brain exhaustion" in the past. Now we know that these symptoms and illnesses are actually due to tensions or emotional problems and conflicts which drive people to push themselves beyond the limits of their physical endurance. One cannot conserve "brain

power" by not using one's brains. On the contrary, the more a physically and emotionally healthy person uses his brain, the better it will be in the later years.

We have all seen examples of this in people like the scientist, Einstein, and Toscanini, the orchestra conductor, whose abilities certainly did not wane when they reached old age. The doctor-author, Oliver Wendell Holmes, began writing *Over the Teacups*, and at the same time continued his important medical work, when he was seventy-nine. Darwin wrote one of his major scientific books when he was over eighty. Benjamin Franklin was chief executive officer of the state of Pennsylvania from the time he was seventy-nine until he was eighty-two. Tennyson wrote the beautiful poem, *Crossing the Bar*, at eighty-three. Verdi composed *Ave Maria* and *Te Deum* at eighty-five. Galileo's scientific discoveries continued when he was in his nineties. Florence Nightingale engaged in effective health crusades until she died at ninety. Titian, who was born in 1477, painted *The Last Judgment* when he was over eighty, and was still producing masterpieces when, at the age of ninety-nine, he died of the plague, in 1576.

These are only a very few of the many great things that have been accomplished by old people. Isn't it encouraging to realize that the work they did in their later years equals or excels their remarkable accomplishments when they were in the so-called prime of life? In other words, their brains certainly did not wear out from being "overworked"!

I also want to call your attention to a few of the many people who embarked on new ventures late in life. "Grandma" Moses began to paint when she was seventy-nine, and was almost immediately successful. Clara Barton, having founded the American Red Cross, became its president at the age of sixty-one; when she resigned twenty years later, it was to establish the American National Association for First Aid, and at eighty-nine she learned how to type in order to help her work. The Roman statesman, Cato, began to study Greek when he was over eighty, and Supreme Court Justice Oliver Wendell Holmes (the son of the doctor-author) decided even later in life that it would pay him to learn this language.

From the scientific point of view, there is nothing astonishing about the fact that these people could learn so late in life. Tests have been made which prove conclusively that there is no truth to the saying "You can't teach an old dog new tricks." It all depends on whether the old person wants to learn. These tests show that older people tend to learn a trifle more slowly, but they also learn more thoroughly, so that they actually *master* a new subject in the same length of time as do younger students.

We used to believe that memory faded with age. It is true that many

old people forget names and recent events, while recalling the past in great detail—and often bore their young friends by recounting it. Now we know that memory is directly related to interest. Many of us suspect this when we hear a boy, who cannot remember when Columbus discovered America, rattling off the batting averages of his favorite ball-players. Older people do, indeed, forget recent events, because many of them are interested only in the past. Then, too, remembering is an art or skill that can be developed, and it is possible to do so late in life. It is not at all unusual, in the theatrical profession, to find elderly actors and actresses who learn long and difficult parts in record time.

Older people have a natural advantage when it comes to judgment, which depends not only on the ability to reason, but on experience.

EMOTIONAL ASSETS

I am sure that emotional assets and liabilities compare pretty well in the later years with those we find on the ledger at any period of life. The mental, or emotional, diseases that result from physical causes, such as the *psychoses* due to *cerebral arteriosclerosis*, are far more common in the aged than in the young, but most *manic-depressive psychoses* appear between the ages of twenty and sixty, while *schizophrenia*, which accounts for over half the inmates of mental institutions in this country, is most likely to afflict people in early maturity. The large number of elderly people in institutions is due, at least in part, to family situations which make it impossible to care for them at home. No less important is the indifference found in the overworked personnel of mental institutions and in the general public.

One of the most heartening single facts that has come to my attention concerns the William Hodson Community Center located at 4190 Third Avenue, New York City. Opening in 1946, this interracial, nonsectarian day center had a membership of 3,000 by 1953—all elderly people, *none of whom had to be institutionalized for a mental disorder*. As this cannot be due entirely to luck, it indicates the tremendous part which the opportunity for a full life (as provided by the Center) plays in the mental health of old people.

Fear, anxiety, and insecurity are extremely damaging to the emotional health of old people—as, indeed, they are at any time. The irritability of the aged is frequently due simply to fatigue, and responds readily to rest. The dislike of change and a suspicious attitude toward anything or anyone new, often stems from a lack of self-confidence or a loss of self-confidence. It is not characteristic of old people who are emotionally secure, although elderly people may tend to be conservative.

It is true that there are special emotional difficulties in this, as in

other, periods. It is not surprising that many of them occur in the "youth of old age" for, as I pointed out in Chapter 21 which deals with adolescence, it is not easy even for young people to make a transition. I discuss some of these problems in dealing with the "change of life" in women, on page 766.

It is after we pass the midway mark that many of us face the fact that we are mortal and must die. We face it as a personal, emotional matter and not merely as an intellectual one. Some people accept it with equanimity. But to a great many others, this "shock of recognition," as it has been called, is profoundly disturbing. If you experience it, don't feel that there is anything wrong, or weak—and certainly, nothing "insane"—about you.

Can the fear of death be overcome, or at least minimized?

I have discussed this problem with philosophers and psychiatrists, and with clergymen and doctors who, like myself, have often been in the presence of death. Here are some ideas I have found helpful, both personally and for others. Each of us has noted that people will go to great lengths to escape from this universally feared and dreaded enemy; and we have expected the terror to increase when escape is no longer possible. But this is not the case. Quite the contrary. We physicians have seen patient after patient accept death with equanimity when the time has come. We have even heard them express the sentiments of William Hunter, the distinguished anatomist, who said on his deathbed, in 1783, "If I could hold a pen, I would write how easy and pleasant a thing it is to die." The great physician, William Osler, made a careful study of a large number of deaths. "The great majority," he wrote, "gave no sign one way or the other; . . . their death was a sleep and a forgetting." To the dying, then, the face of death is not that of a terrible monster. I cannot tell you how or why God, or nature, has made it so. But surely this fact should help us overcome our fears.

I will never forget the remark made by a young patient who was facing a dangerous operation. "I'm not worried about dying any more," he said. "I got to thinking about all the wonderful people who have died, and it seems to me, it can't be too bad if they've all done it."

This boy had established an identified-emotional-unity with the dead. It is one excellent way to minimize the fear of dying. Try to identify with people who stood for the finest things you live by—your own grandparents or parents, or some great men and women who have inspired you.

Be proud of your own life. Realize that each of us has contributed in an important manner, even if we have led the simplest kind of life. There could be no human, social living if it were not for the joint cooperative efforts of ordinary individuals. Each thread is an essential part of the pattern of life, touching and supporting the lives of others.

Talk about the meaning of life and death with members of your family or your closest friends. It will help you to work out your own adjustment. If there are things in the past that weigh heavily on your conscience, or if you fear death excessively, discuss the matter with your clergyman or doctor or a psychiatrist. Shakespeare said,

“Cowards die many times before their deaths;
The valiant never taste of death but once.”

In my opinion, he should have said, “The badly adjusted die many times before their deaths.” One must be able to adjust to life in order to accept the fact that it will end.

Once the adjustment has been made, there are real rewards that come with aging. Many intellectual powers increase. Experience and wisdom are rewards of later life. The well-adjusted older person approaches true freedom because he has overcome the self-consciousness that causes so much pain and frustration in the early years. He gains in poise and self-control, becoming more tolerant of himself and others. Although emotional experiences are less acute and intense, they are richer, deeper, and more subtle. Past efforts are rewarded and promises fulfilled in the harvest season, and Indian summer is the most beautiful time of all.

PHYSICAL ASSETS

People usually assume that all the items in this category will be entered in red ink. This is not so. Many of the physical liabilities of old age are relatively minor; and there are even some assets.

It is true that certain changes occur in the body with the passing of years, but the organs and tissues of an aged person often compare very favorably with those of his juniors. We all know people of advanced years who have no infirmities and whose health any young person could envy.

The process of aging is usually an uneven one. For example, the *thymus gland* atrophies and disappears after puberty, and the *tonsils* are senile when we are fifty. In most individuals, certain organs will show signs of impairment while others remain “young.” I can’t recall finding an elderly person suffering from a condition which I have not seen in individuals one, or even two, generations younger.

The *eyes*, *ears*, and *teeth* are a good example. Few people reach the age of sixty-five with a full set of natural teeth, even with the best of dentists, care, and luck. But how many of your acquaintances haven’t had a tooth pulled by the time they reach forty-five or thirty-five—or even twenty-five? As a rule, cavities occur less often with advancing

age, and this tends to compensate for the toll exacted by constant wear and tear.

By the time we reach fifty, most of us need glasses for reading. But how many of us have had to wear glasses since childhood? Occasionally we even hear of an older person who can actually see better than when he or she was young.

While it is true that our hearing ability decreases from the time we are in our twenties, the rate of decline appears to be more closely related to inheritance than it does to age. An operation may correct the form of deafness due to *otosclerosis*, the hardening of the tiny bones of the ear. More important, however, is the fact that the types of deafness attributed to "catarrh," actually due to infections or allergies, are being prevented by early treatment. And the older person is far less susceptible to the middle-ear infections from which so many children suffer.

In our society, which places such a high premium on sex, many people worry about the effect of aging on their sexual powers. This troubles men more than it does women. It therefore comes as a welcome surprise to them to learn that sexual potency persists surprisingly late in life. Many experts state that the period of *full potency* in the male extends into the fifties and even well past the sixtieth year.

It seems to me that nature usually permits sexual activity in normal people as long as they need it. When the need vanishes, the desire also fades. Of course, a kind of wistful nostalgia may remain. Supreme Court Justice Oliver Wendell Holmes jokingly expressed this when, at the age of ninety-four, he looked at a particularly pretty ankle, and sighed, "Ah, what wouldn't I give to be seventy again!"

There is no physical limitation to the sexual potency of women, such as the problem of erection in the elderly male. The matter is almost entirely an emotional one—of the sexual needs of the particular individual. As in men, when this need vanishes, the equivalent of sexual tenderness can be found in nonsexual affection or love.

There are, occasionally, elderly people who cannot restrain their sexual impulses. This may cause distressing or dangerous situations. Be sure to bring such instances to the attention of a doctor immediately; they are emotional problems, probably associated with true senility.

DISEASES IN THE ELDERLY

Scientific studies of the *causes of death* in aged individuals indicate clearly that, in the majority of cases, the disease originated when they were in their middle years. This is one more of the many arguments for regular medical examinations and health education.

We cannot say that *any* disease is actually *caused* by old age, in the same way that, for example, we can say certain diseases are caused by childbirth. However, there are illnesses which are most likely to occur in the later years. In addition, diseases often run a somewhat different course in the aged, whose health and hygiene requirements change with the passing years.

As people age, they are less apt to suffer from infectious diseases. This is true not only because they cannot catch certain diseases which they had in the past, but also because they have acquired a partial immunity to other infections without ever being ill—and even some immunity to colds.

When older people do develop one of these illnesses, it usually is less severe than it would be in a young adult. For example, tuberculosis is less dangerous to an elderly person than to an adolescent. Incidentally, this is also true of some noncontagious diseases such as diabetes.

The fact that the symptoms are less acute and severe is not an unmixed blessing. An elderly person with tuberculosis may think he or she has “just a bronchial cough,” and may infect a young member of the family—with serious consequences. On one occasion I visited a family and, inquiring about the grandmother, was told that she had taken to her bed because she was feeling tired. I went to her room mostly as a matter of courtesy. “I guess it’s my age; or maybe I’m getting to be a hypochondriac,” she said apologetically. “I’m sure there’s nothing the matter with me because I took my temperature and it was practically normal. But I feel very poorly.” Examination revealed that she had pneumonia, which could have been fatal if it had remained untreated.

Another good example of this is the vigorous old lady who had organized some of her contemporaries into a group called “Never Too Late.” One afternoon she telephoned her doctor to say she had caught the “intestinal flu” that was making the rounds, and to ask for some medicine that would enable her to address her club. Although her doctor told her to stay home until he could examine her, she went to the meeting. By the time she had delivered her speech she felt so ill that she took a cab to the doctor’s office, where she collapsed—with a ruptured appendix. Fortunately she survived the peritonitis which set in, and learned the lesson, as she ruefully puts it, that “it’s never too late” for appendicitis.

SURGERY IN THE AGED

The fact that older people are able to withstand operations extremely well in these days of *improved surgical techniques* has, in my opinion, done more than anything else to rob old age of its greatest tribulations. It is now possible to carry out a four-hour operation on an eighty-year-old

patient with practically no danger. I marvel every time I see one of these patients suffering only a minimum of shock, recalling how severe the symptoms used to be only a few decades ago. In those days, many elderly people were forced to endure painful, disabling, and even dangerous conditions which can safely be corrected by surgery today.

Among these diseases are: **enlargement of the prostate, hernia, cataracts,** and a **prolapsed or fallen bladder, rectum, or uterus.** To break a bone once spelled disaster. It could mean the end of an active life for an old person—especially if the bone was in the hip or thigh—for bones knit slowly in the aged. Today, operations have been perfected for nailing the bones together, so that they heal adequately. This type of surgery requires the expert work of a specialist in *orthopedics*. If such a surgeon is not available in the patient's community, a trip to the nearest medical center is a most worthwhile investment. It may save an old person—and his or her family—from the problems of a crippled existence.

Unfortunately, many old people and their families do not realize the tremendous advances that have been made in surgery. They suffer needlessly because they are afraid of an operation. My own mother was no exception. At sixty-five, she began to lose her eyesight, due to *cataracts* (see page 132). We, her three sons and three daughters, explained that her sight could be restored by an operation. She seemed strangely hesitant. One excuse after another was advanced to delay the operation. Yet she appeared to have the fullest confidence in her ophthalmologist and her own family doctor; and she knew that I, too, approved the operation.

After nearly six months, the cause of her hesitation became clear. She had never been a patient in a hospital. All her babies had been delivered at home. To her—as to many old people—a hospital had always represented a place for patients suffering from fatal diseases.

To further complicate the problem, the eye specialist operated at a medical center fifty miles away from Mother's home. She knew she would be temporarily blind for several days after the operation because both eyes would have to be completely bandaged. It was too terrifying a prospect for her to face even with the assurance that the reward would be renewed eyesight.

The solution was easy when the problem was understood. Mother had developed a great fondness for a nurse who spent five years with her during my father's last illness. We arranged to have the eye surgeon engage this nurse for my mother's hospitalization, and to have her live in the hospital. The moment the arrangement was mentioned to Mother, she started to pack for the trip. She really had been extremely eager to have that operation.

From that experience, I learned a good deal about how old people react to hospitals. The average young or middle-aged person requiring an

operation asks, first of all, "Who is the best doctor for the job?" Then, later, "Which hospital does the doctor consider best for this type of surgery?" He wants to get it over with in the shortest possible time. Not so with elderly patients. They are confident that a capable doctor has been engaged for them and that all the technical arrangements will be satisfactory. What really troubles them is the terrifying prospect of undergoing a new and potentially dangerous experience.

Old people need to be thoroughly reassured about impending surgical operations. All possible details should be explained to them, even those that seem to be quite insignificant. If it is feasible, the patient should visit the hospital to see the room he or she will occupy, and to meet the nurses. It is important for them to know the people involved. If the family doctor is calling in a surgeon, elderly patients should become acquainted with him well in advance of the scheduled operation.

PARTIAL RESTORATION OF FUNCTION

I want particularly to emphasize the importance of partial restoration of function as far as old people are concerned. Physicians understandably hesitate to take money from elderly people for prolonged therapy that may produce a return so small as to be barely measurable. Make it clear to your doctor that you do not expect him to present you—or your parent—with the fountain of youth, and that you will be grateful for a small improvement. It can make a tremendous difference. For example, an elderly person may be quite miserable when confined to bed, whereas being able to get up for meals, and go for an occasional drive or short walk, will make life happy and normal. Again, I'd like to illustrate my point by referring to my mother's experiences.

The grim hand of old age really seemed to be gripping Mother when she was seventy-three. She was often seized by a painful cramp in the calf of the leg. On some nights it was so severe that she was awakened by it. Poor Mother! She consulted her friends and neighbors instead of the doctor, and they told her, "It's hardening of the arteries. Nothing can be done."

Finally Mother called me in distress to tell me that an ulcer had formed on her foot. It just wouldn't heal, she said.

Careful continuous medical attention was necessary. Slowly the circulation in the hardened arteries improved enough so that she could again attend to her daily chores and enjoy short walks. Her sleep was no longer interrupted by pain. When the improved circulation brought more blood to the leg, the ulcer eventually healed. Mother was lucky. She was treated early, and her arteries were still flexible enough so that this helped her circulation. I'm certain she was not *cured*, but the *partial improve-*

ment made it possible for her to visit her many friends and her twenty-one children and grandchildren.

Similarly, her deafness was not "cured." But with the help of a hearing aid she was again able to enjoy the movies, the radio, and "visiting"—instead of feeling alone and isolated. It was during this experience that I learned something else about the reactions of elderly people to health problems. Although partial restoration of function is extremely important, the doctor's approach must not be negative. He must avoid warning the patient not to expect too much. Most old people don't expect to attain perfect health again, but unless the doctor makes his recommendations with force and enthusiasm, they may take the path of least resistance.

It was not easy to persuade my mother to go to an *otologist* (ear specialist). Being quite sensitive and dreading the idea of a hearing aid, she tried to conceal her deafness. Finally she went to an excellent doctor, but he failed to offer her sufficient encouragement, and it took time and patience—and a second and stronger recommendation on his part—before she was willing to try a hearing aid. Failing to plan carefully enough, we turned Mother over to a competent instrument company where, unfortunately, the technician was rather inept, and tuned the instrument so loud that the strange blares, scratchings, and static startled Mother, and she immediately decided the whole procedure was senseless.

After another six months, we tried again, this time more thoughtfully. We found an agency which, on a nonprofit basis, demonstrates various hearing devices for the sole purpose of helping people select the most suitable instrument. We described Mother's unfortunate experience to one of the technicians in advance. Her tact and patience were rewarded, for she convinced Mother that an apparatus would be very valuable.

One reason I have told these stories is to admit frankly that it isn't always easy to guide older people in matters of health—even when one happens to be a doctor as well as a devoted son! But it is worth everything you put into it.

Naturally, choosing the right doctor is especially important as far as older people are concerned. If they do not have confidence in a "youngster," they should have one of the older physicians. On the other hand, elderly patients may find that a younger physician transmits some of his vitality to them. There are advantages in having the same doctor attend both the older and younger members of a family. This keeps children in close touch with the medical status of their elderly parents, and also promotes the "teamwork" so valuable in solving medical problems.

People who do not have the blessings of children and grandchildren will find a trusted doctor one of the greatest comforts of their old age.

Like their clergyman, he can always be depended upon. That is why I urge older people, especially, to stick to one doctor, and get to know him well—and let him know them, too, not only as patients but as individuals.

DISCOMFORTS AND MINOR IMPAIRMENTS OF OLD AGE

It is true that old age brings inevitable changes in the body, and many of these may be reflected in discomfort and minor impairments. The joints and *bursae* (see page 116) aren't so well lubricated as they are in younger people. For this reason, certain forms of rheumatism and arthritis frequently occur. Usually, these are not the crippling types, but they do cause discomfort. These symptoms, as well as many others such as buzzing in the ears, insomnia, dry skin and so on, can be greatly relieved by your doctor. Give him a chance! I've heard of more than one person who, without saying a word to his doctor, failed to take the aspirin he prescribed, because it was thought to be "habit-forming" or "a heart poison." This old superstition has been completely disproved by medical research. Aspirin, or a similar preparation such as Bufferin or Empirin, can be very helpful to elderly people suffering from headaches, rheumatism, and a number of other complaints. Your doctor may also advise the use of a heating pad, or some other form of physiotherapy such as warm baths or Swedish massage, to relieve aches and pains.

Constipation, and the consequent use of laxatives, has often become a fixed habit by the later years of life. (See page 746 for my discussion of constipation.) Although mineral oil is the best remedy, I consider it wise to accept the one which an elderly person is accustomed to, unless I feel that some real harm is being done—whether it's hot lemon water at 6:45 A.M. or the enema which some old people insist has magical virtues. The important thing is to watch for a sudden change in established bowel habits. For example, the onset of constipation in someone who has always been regular warrants an immediate examination because it might indicate an obstruction due to a tumor.

Skin and facial changes occur as old age approaches. The skin becomes drier and less elastic. It may sag or wrinkle. If a number of teeth are missing and have not been replaced by dentures, the face is frequently disfigured.

Facial massage, lubricating cream or oil, careful tanning in the sun, and exposure to fresh outdoor air will help keep the skin in a more youthful condition. As a rule, I prefer to have my patients accept the changes of old age, let nature take its course, and invest any spare

money in good meals, vitamins, and a full set of false teeth, if these become necessary. However, if wrinkles and sagging cause serious concern and worry, they can be helped by a skin specialist. He can be extremely helpful to actresses, actors, and others to whom a youthful appearance is extremely important. It is even possible to remove or to stretch badly sagging or wrinkled areas of skin on the face and neck. *This must be done only by a qualified expert in plastic surgery.* AVOID QUACKS. Always consult your own doctor. He has a list of accredited specialists in cosmetic surgery.

Despite the complaints we make about it, our *digestive systems* usually hold out pretty well. Death is very seldom caused by the "wearing out" of our digestive organs.

Some old people do develop finicky appetites, partly because they actually need less food, but often because of trouble with their teeth. They may avoid meat if chewing is difficult. It is important for older people to maintain an adequate diet, especially one containing plenty of proteins and minerals, rather than one high in starches and sugars. Meat, fish, eggs, and cheese are good sources of protein. Milk, which is high in protein, is the best source of minerals such as calcium and phosphorus. A pint of milk a day is essential for old people. Those who do not like to drink milk can take it in soups, desserts, and various other milk dishes. Fat-free (skimmed) milk is very good for elderly people because it provides the necessary minerals and protein, without the extra calories from the butterfat in whole milk. Consult my discussion of diet on page 25. Elderly people who must live on limited incomes can purchase the more economical types of protein and mineral foods listed on page 26.

I like to prescribe extra vitamins for people who are over sixty. Usually a capsule or two a day of multivitamins is sufficient. If the supplementary vitamins cause troublesome intestinal gas, natural foods can be substituted for them: cereals, liver, and pork chops for the B vitamins, orange and tomato juice for vitamin C, and cod-liver or halibut oil for vitamins A and D.

DISEASES OF OVERWEIGHT

Most of the problems connected with digestion do not arise from eating too little, but from eating too much. This is particularly true in elderly people. In fact, many of the illnesses which are spoken of as diseases of old age could more properly be called diseases of overweight.

Be sure to read my discussion of overweight on page 41. Life-insurance figures show that obese people are more apt to suffer from diseases of the circulatory system (the heart and blood vessels) which

cause half of all the deaths in the elderly. People who are overweight are also more apt to suffer from cancer, which causes one eighth of all the deaths in people of advanced years. Being obese in later life increases the incidence of diabetes, diseases of the gallbladder, backache, and footstrain.

A chart showing the death rate of men whose weight is normal and of men who are overweight, reveals the startling fact that, between the ages of forty-five and fifty, men who weigh 60 pounds more than they should have a death rate that is 67 per cent higher than that of men whose weight is normal. In other words, each extra pound increases their chances of dying by a bit more than one per cent. However, before you start worrying about that extra pound, be sure to read page 818 of my chapter on the Calculated Risk in Health. In this chapter I also discuss the shortsightedness of attempting to lead the existence of a vegetable in the hope of adding a few years to life.

HOW TO LIVE TO A RIPE OLD AGE

In ancient Rome the average person lived to be twenty-three, while during the plague-ridden sixteenth century, life expectancy was under twenty-one. Yet even in those days some people managed to live well into the eighties and the nineties. In fact, although far more people reach old age today than in the past, *the actual life span has not been increased*. We hear of people who live for a decade or even two past the century mark, but very few of these cases have been verified. Today, as in the past, a hundred years or so appears to be the limit of man's stay on earth.

Scientists are studying the question of the life span. Why, they want to know, should a three-year-old rat be as aged as a five-hundred-year-old Galápagos turtle? Why should certain cells be practically immortal, while others live for only a short time? Facts are being assembled, and these fascinating questions will, I am confident, eventually be answered. Perhaps an increase in the life span of human beings will then be possible.

In the meantime, let us consider how some people—even in the days of a low life expectancy—managed to reach a vigorous old age.

There is a lot of truth in the joking remark that one way to live a long time is to choose the right ancestors. Careful statistical studies have shown that almost 87 per cent of the people who live to be ninety had at least one parent who passed the seventy-year mark, and about the same number had two grandparents who reached a ripe old age. These figures are particularly significant when we realize that some of the

parents of the remaining 23 per cent of these long-lived people undoubtedly died as a result of accidents, wars, and other causes not connected with longevity.

Many other reasons have been advanced by aged people who felt they knew the secret of long life. Some, like Cornaro, a famous Venetian who lived for almost a hundred years, recommended leading a sober and unemotional life, never experiencing anguish or joy. On the other hand, Titian was an intensely emotional man, and he lived to be ninety-nine. Some say that the elderly should, above all, avoid sexual excitement—while others point to Doctor Hahnemann (the founder of homeopathy) who married a young woman when he was eighty, and, having been almost decrepit, became vigorous again. George Bernard Shaw adhered to a vegetarian diet. Connie Mack, one of baseball's great names, who was managing a major league team when he was in his mid-eighties, urged people to eat small meals and to get nine hours of sleep each night. For every old man or woman who insists that the way to live long is to avoid tobacco and alcohol, there is another who gives credit to a corn-cob pipe or a daily tot of rum.

Despite all their contradictory secrets of success, we notice that most of these people have one thing in common—an *interest in, and an enthusiasm for, life.*

I put this at the head of the list. Close to it, in importance, I put: *avoid preventable death*, due to accidents and illnesses which, if detected in time, would not be fatal; and *observe the rules of health and hygiene.*

Although I have covered these two points in other parts of this book, there are some specific rules of health and hygiene for elderly people.

EXERCISE

Most doctors feel that the benefits of exercise have been very much overrated, especially for older people, and that recreation and ordinary activity are far more valuable. Some people enjoy vigorous exercise and are able to engage in it all their lives. However, older people should *always avoid strain and exhaustion.* By the time you are forty, you should have established the custom of consulting your doctor before you undertake any new form of exercise. After that, always speak to him at your regular medical checkups about how much and what kind of exercise you may take. A busy doctor may forget that you are a tennis addict, and will fail to tell you when the time comes for you to give up singles in favor of doubles, or doubles in favor of golf.

Always stop exercising as soon as you feel tired, long before you feel exhausted. Try to be a philosopher, not a sprinter, when you're tempted to chase after that streetcar—or anything else. Stairs have a way of be-

coming a menace as we grow older. Avoid running up or falling down them.

REST

This becomes increasingly important in the later years. Try to rest for half an hour after meals, and at intervals during the day. Older people whose work does not permit them to lie down should take advantage of "breaks" or rest periods to relax as completely as possible, with their feet elevated, perhaps on a chair, if it is at all feasible. However, *avoid inactivity*. If you happen to be ill and the doctor says you should get up, by all means make the effort to do so. A prolonged, unnecessary stay in bed is harmful, rather than helpful, to the aged.

SLEEP

People tend to need less sleep as they grow older. If you required eight hours when you were forty, the chances are that six hours will do when you are seventy. Stay in bed longer than that if it rests you, but don't lie there worrying about your insomnia. (There are some helpful suggestions for older people in my section on *insomnia*, page 732.)

WATCH YOUR WEIGHT

As I said earlier in this chapter, people tend to require less food as they grow older. I can't tell you just how much this is in your case—but *your scales will*. If you put on weight, talk it over with your doctor. *Older people should always diet under a doctor's supervision*. If you are overweight, the only thing safe for you to do on your own is to cut out candy and other sweets, and starches between meals, making certain you are eating the well-balanced meals which I describe in my chapter on *The Food You Eat* (page 25) and on page 800 of this chapter.

ALCOHOL AND TOBACCO

People who smoke and drink in moderation usually do not have to stop in later years, provided they are healthy. However, moderation is essential. It is usually easier for an elderly person to cut down gradually than to make a sudden change. Tobacco is more apt to cause distress than alcohol—for example, dizziness and indigestion. It is frequently forbidden in cases of even relatively minor illnesses such as a tendency to bronchitis, to which elderly people are very susceptible, or high blood pressure. Be sure to abide by your doctor's decision if he

tells you to cut out smoking or drinking. On the other hand, he may prescribe small amounts of an alcoholic beverage for medicinal purposes.

WORRY

If you have not learned how to keep from worrying unnecessarily, start right now. This is a luxury you cannot afford. By now you should know yourself well enough to find ways of eliminating or cutting down on those needless worries. Of course, some worries are unavoidable. I remember my mother's "heart trouble" which, her doctor told us, was caused by her sleepless nights during the long months when two of her sons were facing the unpredictable dangers of World War II. When they were safe again, her "heart trouble" vanished. But she could have been spared at least some of it if she had mentioned it sooner. Even when there is real cause for worry, the doctor can help—for example, by giving you a sedative at night—if you will only tell him about it.

CLIMATE

Older people should be particularly careful not to exert themselves when the cold, or, even more important, the heat and humidity, lowers their vitality. However, as far as pulling up stakes to find a more moderate climate is concerned, remember that older people find it particularly difficult to adjust to new surroundings. Their old friends, the church they attend, even the sight of their own street, is often better medicine for them than anything Florida or California can offer in the way of climate. All the warnings I issue in my chapter on Climate and Illness (page 224) are particularly applicable to older people.

RETIREMENT

Many of us look forward to retiring some day. But how often we hear of someone who, having worked hard all his life with that goal in mind, begins to fail mentally and physically the moment he actually reaches it!

In order to retire successfully, one must have far more than money in the bank. *One must have a reserve of interests that make life worth living.* That is why I urge young people to cultivate hobbies and recreational activities they can continue in their later years. As Dr. George Lawton, the authority on gerontology, puts it, "To grow old successfully, a man must learn to push around, not his body, but his mind. If his

speed, strength, and endurance decline with the years, then he must train in advance skills which will hold up with age and even improve." People who can slip from a business into a hobby or avocation, who can gradually devote less time to work and more time to their outside interests, usually make the transition quite successfully.

This is seldom possible when retirement is involuntary. The dangers of sudden, enforced retirement are clearly revealed by statistics. For example, in railroad men the incidence of mortality reaches a peak in the first year after they stop working. We can only guess at the tremendous increase in emotional disturbances and physical ailments, as these are seldom reported by elderly people or their families.

Many people are forced to retire when they are not only capable of working and want to work, but actually need the full income they were receiving. The older person whom no one will employ is often a tragic figure. This problem is far larger than any individual. I think it can be solved, but only when all of us who expect some day to be old work together to solve it through our communities and our government.

The 1950 National Conference on Aging, held in Washington, D.C., was a step in this direction. It has stimulated research into measures for employment, as well as health, recreation, education, and rehabilitation, to benefit our older citizens, and through them, the country as a whole.

A number of organizations provide opportunities along these lines. The interracial and nonsectarian William Hodson Community Center which I mentioned on page 791 is an outstanding example. Clubs of all kinds for elderly people are springing up throughout this country and in other countries. Your town hall, church, community center, or library can tell you about those in your community. If your community does not have a Day Center, McGuffy, Darby and Joan, Golden Age, Old Guard, or Old Timers group, why not organize one? Your state legislature may be persuaded to give financial assistance. Your local department of welfare should help you, or at least tell you where to go for assistance and advice.

INDEPENDENCE, USEFULNESS, AND INTEREST

The basic needs of older people will be satisfied if they are independent, useful, and interested. Please don't be hasty about saying "That lets me (or my parents) out!" It may be true that you have no income and must depend on a son or daughter for support; or that a parent is living with you who just doesn't seem to be interested in any

thing. Even so, *some degree* of usefulness, independence, and interest may be possible. It will make a tremendous difference.

I know how difficult family situations can become when old people must live under the same roof with their children. That is one reason why it is usually best for the elderly to maintain their own homes as long as possible. In a few communities, housing projects have been built especially for old people, and have made it possible for them to be independent. Often a room in a light-housekeeping hotel or boarding house proves satisfactory if a house or apartment cannot be maintained. Some boarding houses are run for older people, or can be set up for that purpose. They provide whatever is necessary, which may be simply doing the heavy housecleaning, or may be the kind of complete care offered by nursing homes or by individual families which provide "foster homes for the aged." Some "old people's homes" are excellent, although the majority are inadequate and depressing, because of the indifference of the community.

When elderly people must live with their children, it is usually best not to separate a husband and wife. If they are inclined to quarrel with one another, you will certainly often wish they would at least visit you and your brothers and sisters alternately. But they undoubtedly enjoy each other much more than you realize, so try to remember that they had to put up with many quarrels when you were children!

It isn't easy for elderly people to divide their time between their various children, although this is usually the only fair arrangement. The difficulties can be minimized by establishing definite dates. Any uncertainty is very trying for old people. If possible, make the changes seasonal, as it seems natural to spend the winter months in one place and the summer ones in another. Having a room of their own awaiting them, with some of their cherished possessions in it, adds immeasurably to their feeling of security and independence.

Every effort should be made, on the part of both generations, to find means of achieving a degree of independence. Often, it is easier for a woman to feel she's "paying her way" than it is for a man, since she can help with the housework and the care of young children. But elderly men can be extremely useful, too, if enough time and thought is put into it. Hobbies, crafts, and "handy-man" skills often make it possible for them, too, to "earn their keep." I know of a "Rainy-day Stamp Collectors' Club" which, under the guidance of a grandfather, was a boon to the mothers of the neighborhood and a source of cigar money to him. Another old man became the favorite model in a local art class. The important thing is to find something for each individual to do—which should, of course, be appreciated by the younger members of the family.

Projects outside, as well as within, the home help to bring a feeling

of independence and prevent the irritations of too much personal contact. Those who can go out benefit tremendously from this. Some older people go to a day center to work, or for study and recreation, as regularly as they once attended business. Clubs, church, or charitable affairs and visiting, if possible on a regular weekly basis, are interesting and stimulating breaks in otherwise monotonous routines. I know one elderly lady whose "job" consists in escorting an infirm friend, a retired teacher, to a local institution so she can read to those whose eyes have failed them. She always complains that her friend is quite capable of going without her, but the truth of the matter is that she enjoys the excursion because she feels useful. Doctors, clergymen, and social service workers can often find a need for the older person to fill. This is particularly important for those who do not have families or friends whom they can serve. And when I say "serve" I want to remind you that one can be a useful member of society even if one can do no more than be a pleasant part of a family, or other group.

In this chapter I have spoken very little of true senility, or "morbid senility" as contrasted with normal aging. That is because it is a mental illness which I discuss at various places in Chapter 13. Even when this condition manifests itself in mental decadence, the patient's family must not conceal it out of shame or misplaced feelings of duty. Like any other illness, it requires a doctor who may or may not be able to alleviate its symptoms. As in the case of other illnesses, his advice must be followed.

Attitudes toward the aged vary tremendously in different forms of society. Among the Eskimos, it was customary to set them adrift on an ice floe to die. Among the Chinese, they were venerated.

Surely the most civilized attitude to take is to regard old people simply as *people*—who have lived a long time and who have special problems, as we all do at every stage of our existence. The better we can solve these problems, the more valuable these years will be to the individual and to society.

The Calculated Risk in Health or How to Avoid Being a Hypochondriac

WHEN one of my nonmedical friends learned that I was writing this book, he said it was a wonderful idea and he'd like to order a copy immediately. Then he added somewhat doubtfully, "But don't you think there's a danger that it will make some people worry about themselves—that they'll get to be hypochondriacs who think they have every disease they read about?"

Other friends expressed the same concern, quoting "Where ignorance is bliss, 'tis folly to be wise," or "A little learning is a dangerous thing." One of them called my attention to a story by a British humorist about a man who went happily into the library to look up some illness he thought he might have. He went right on reading his way through the medical book and, feeling certain he had all the diseases in it (except, possibly, housemaid's knee) he "crawled out a decrepit wreck." Fortunately he went to his doctor who gave him a prescription which turned out to be as follows:

"1 lb. beefsteak with 1 pt. bitter beer every six hours.

1 ten mile walk every morning.

1 bed at 11 sharp every night.

And don't stuff up your head with things you don't understand."

Stories of this kind are always making the rounds of medical schools. There's usually one about a student who suffered from every symptom he studied, and who refused to take the course in obstetrics because he dreaded the labor pains. Others concern patients who managed to catch a glimpse of their medical histories or charts, and fainted at the sight of a word like *prognosis* or *alopecia*, thinking it meant they had a fatal ill-

ness. (*Prognosis* means a prediction about the course of a disease, and *alopecia* means baldness!)

However, doctors know that patients don't need to read about actual diseases in order to suffer from imaginary ones. We have all had patients who could invent more and better ailments than medical science ever dreamed of. Still, medical books can be alarming, especially old-fashioned ones. I glanced through one of them recently, and was struck by the number of diseases about which the author was extremely pessimistic—from *Anemia*, *Pernicious*, which was formerly always fatal, to *Zymotic Diseases*, the name given to diphtheria, scarlet fever, and similar contagious illnesses which no longer constitute a serious problem today.

Doctors know that ignorance is *not* bliss in the case of countless people who suffer and even die from preventable diseases, or permit a beloved child to die simply because they lack the knowledge to heed nature's danger signals. And no one would say that "a little learning is a dangerous thing" when a person who has no intention of studying electricity or mechanics acquaints himself with the fact that he'll get a shock if he touches a live wire, or a blowout if his tires get too thin.

However, it is true that after each health campaign or drive to raise funds for a health organization, doctors are besieged by people who are afraid they have the disease that has been publicized. Campaigns concerned with cancer, tuberculosis, heart disease and high blood pressure, diabetes, obesity, rheumatism and arthritis, multiple sclerosis, cerebral palsy, muscular dystrophy, and venereal disease, give suggestible people something to worry about all year long.

Here are a few examples from some of my own recent experiences.

A middle-aged businessman confronted me with, "Doctor, I want a *yes* or *no* answer. Will my being 25 pounds overweight shorten my life?"

An extremely intelligent young biology teacher told me he had put himself on a low-cholesterol diet. "My blood pressure is a few points higher than it should be. I read that high blood pressure causes arteriosclerosis, and that cholesterol also causes the arteries to harden. As long as I have high blood pressure, I can at least reduce my intake of cholesterol." Cholesterol is one of the fatlike compounds in the body. Medical scientists are not at all sure that it is a cause of arteriosclerosis, or that reducing the amount of cholesterol in the diet necessarily reduces the level of cholesterol in the blood (see page 616). Then, too, when this young man's blood pressure was taken, it might have been a few points elevated because of emotional factors. At any rate, the elevation was so slight it would not, in all probability, ever lead to hardening of the arteries.

A college student asked me whether he would get cancer of the lungs if he continued smoking. "I tried to cut it out," he said. "But I got so jittery I couldn't study for exams."

For years a woman had taken for granted a number of knotty little lumps in her breasts. Her doctor had diagnosed the condition as a mild chronic mastitis, which is merely an inflammation of the mammary glands. This patient carefully followed the directions she had read in an excellent article about self-examination of the breasts for cancer. Her breasts were quite large, and she found herself worrying about each little nodule she encountered: had it been there before? Was it like the others? Or was it a cancer? She would tell herself it was nothing and there was no need to see her doctor again—but, she couldn't keep from feeling her breasts from time to time all day long. Eventually they became quite sore.

A little later in this chapter I will tell you what I said to these people. At this point, I want only to mention them as typical examples of the anxieties caused by certain campaigns. Most doctors are familiar with this. An outstanding physician recently told me, only half jokingly, "The blood pressure instrument is the most dangerous medical invention of modern times! I can't tell you how many patients ask me how high their blood pressure is, as though I were about to pronounce their death sentence. Unless I can show them that the reading is exactly right, they worry terribly—usually without any reason."

In speaking of a campaign against venereal disease, the psychiatrist, Dr. Alfred Blazer, called it "a war of nerves on our youth." He said that syphilophobia, which is a morbid fear of syphilis, "even afflicts young people who are virgins. For them every doorknob is covered with germs." Many other campaigns have waged a similar "war of nerves" on the public who must go to and from work every day in the subway, looking at posters on which a finger points directly at them as potential victims of some fatal disease.

THE VALUE OF HEALTH CAMPAIGNS

I do not want to give the impression that I am opposed to health campaigns. On the contrary, I feel that they, and the voluntary or governmental agencies sponsoring them, do wonderful work. They alert and educate the public. They raise money to carry out vital research and to assist the victims of various diseases, and they deserve great credit for helping to eliminate or control many illnesses that formerly took a terrible toll from our population.

The hush-hush attitude toward venereal disease in the past was

broken down by the excellent campaign instituted by the U.S. Public Health Service. The sale of Christmas seals has indeed helped to "stamp out tuberculosis," which only a short time ago was as dreaded a disease as cancer. It is impossible even to estimate the number of lives that have been saved and the amount of suffering that has been prevented by the efforts of the Heart Association, the Diabetic Association, the National Foundation for Infantile Paralysis, and similar organizations. The endless, tireless—and little known—work of our local public health departments protects us against typhoid fever, dysentery, undulant fever, and other milk, water, and food-borne diseases. It has all but eliminated malaria, smallpox, and yellow fever.

Today we are no longer a prey to the panic our grandparents experienced when epidemics threatened: "acute community hypochondriasis," it could be called. For example: before 1900 martial law was frequently proclaimed if yellow fever struck a community, and anyone who attempted to flee was shot down. This was considered essential if the disease was to be kept from spreading. Not so very long ago, a man who was even suspected of having leprosy might be stoned to death, and people who had so much as touched him were apt to commit suicide. These were panics of ignorance for, as we now know, yellow fever is transmitted by mosquitoes, *not* human beings, and the danger of catching leprosy by touching a leper is, practically speaking, nonexistent.

Now that we have eliminated the ignorance responsible for these panics, must we pay for our knowledge by becoming a nation of chronic hypochondriacs?

My answer is NO. We can have the tremendous advantages that come with enlightenment, and at the same time avoid the danger of being frightened into hypochondriasis, by: (1) *Continuous Health Education*, (2) *Routine, Periodic Medical Examinations*, and (3) *A Sensible Attitude Toward the Calculated Risk in Health*.

CONTINUOUS HEALTH EDUCATION

Most of the harm done by campaigns against the killing and disabling diseases stems from the fact that these campaigns are conducted in a relatively short period of time. Organizations that do excellent work every day of the year are limited to a week or so in which to educate the public and publicize their work in order to raise the major portion of their funds. Whether they want to or not, they must in a sense compete with other valuable organizations. If they want to put across their message, they must use advertising methods and publicity techniques similar to those intended to sell a commercial product. Health organizations

cannot depend solely on serious scientific articles to catch the attention of a public which has grown accustomed to clever high-pressure radio, television, newspaper, and other advertising. The public must be reached directly. People must be awakened to a sense of personal danger. Unless they participate personally, the warning signals of cancer, tuberculosis, diabetes, heart disease, and other diseases will go undetected until the time comes for a regular medical examination or the symptoms become severe enough to cause distress. By then the disease may have progressed beyond its curable stage.

This situation would be greatly improved if these organizations could obtain the money they need without having to engage in intensive fund-raising campaigns; for example, by increased donations from individuals and foundations and by aid from the government. It would also help if the campaigns placed even more emphasis on the fact that the diseases they are publicizing can be cured or controlled if they are detected early enough. As an example, this positive approach to the dangers of childbirth has done a great deal to eliminate fear and anxiety in prospective mothers.

But, most important of all, health education should be a *continuous* process, so that organizations would not have to crowd their warnings and recommendations into a single intensive week.

Health education should begin in childhood. Some primary and grammar schools train small children in many of the essentials of health and hygiene. Some high schools continue this excellent work, teaching first aid, human biology, and the prevention of disease. How about *your* school? Parents can see to it that their children's health education is not neglected, by working through parent-teacher associations, or by organizing interesting after-school programs.

This education should not end when young people leave school. Our knowledge must keep pace with the rapid advances of medical science. Churches, adult education centers, clubs, trade unions, and other organizations should keep Health on their agenda, working out ways of interesting their members by means of lectures, demonstrations, exhibits, and so on, and of bringing these projects to the entire community.

The public health department can be of great assistance. Many of us tend to overlook this valuable agency. Dr. Logan Clendening, a noted authority in medicine, put the rise of public health at the top of his list of the most important advances in medical science occurring in the first half of the twentieth century.

The effectiveness of your local health department depends to a great extent on the interest of the citizens of your community. Public health departments and county health officers have learned how to get excellent results without resorting to scare techniques. These methods need

not be limited to the communicable diseases. Mental illness, for example, is not "catching" in the strict meaning of the word, but we all know that the effects of mental illness in any individual are, in the broad sense, communicated to others in the family or even throughout the community.

ROUTINE PERIODIC MEDICAL EXAMINATIONS

I have devoted an entire chapter (see page 541) to the importance of periodic medical examinations, and I have emphasized this point at various places throughout this book. But I have limited myself to convincing you, as an individual, that you should have checkups at regular intervals. Here I am going to go further; I am going to advocate *compulsory periodic medical examinations for everyone*.

At the beginning, these compulsory examinations could be restricted to searching for *communicable diseases* such as tuberculosis, dysentery, and syphilis. The principle behind this is entirely consistent with the ideals of our democracy. We accept the fact that our community water and milk supply, and the food we eat, should be subject to inspection. We take it for granted that our children should be vaccinated against smallpox. We agree that, at least under certain circumstances, individuals have a social obligation not to transmit illnesses to others. This is the principle behind the laws requiring that individuals who handle food must be examined to make certain they do not harbor the germs of typhoid fever or dysentery. A small, but significant, number of people are carriers, that is, they carry certain germs without being made ill by them. Such individuals are not permitted to work in places where they could transmit the germs to others, with, sometimes, fatal results. Some states require a premarital blood test to detect syphilis so that neither partner will infect the other, perhaps unknowingly, or be responsible for bringing syphilitic children into the world. Nurses and individuals in certain other professions and jobs are examined regularly.

It seems obvious to me that this practice should be extended. Teachers, houseworkers, and baby sitters who are in close contact with our children, should certainly be examined periodically to make sure they are free from such diseases as tuberculosis. Why not include *everybody*, in these days when we come into close contact with total strangers every day in subways, stores, movies, swimming pools, and so on? Compulsory medical examinations are merely an extension—and a most important one—of existing health programs to protect ourselves.

The cost of these examinations could be borne either by the individ-

ual, the government, or both. Those who could afford to, and wanted to, could be examined by their own doctors and pay the entire fee. Others could visit clinics at which the local, state, and federal government could share the cost or assume it entirely. Again, this is merely an extension of existing programs which cover vaccination against smallpox and inoculations against other diseases. The expense to the community would be more than compensated for by the number of lives that would be saved and the disabilities that would be prevented or curtailed—if the prevention of suffering alone does not seem sufficient justification.

In addition to the *compulsory* examinations and tests for communicable diseases, *optional* examinations for other potential “killers” and “disablers” could be provided, again on a free, partially paid, or privately compensated basis. These would include tests for diabetes, cancer, heart and kidney diseases, and other illnesses, according to the age or condition of the individual being examined.

I feel that this is necessary because many people, especially if they have not received the proper health education, are not sufficiently aware of the need for checkups to be willing to overcome their inertia and pay the cost of such examinations.

Naturally, I realize that this program will not be introduced today or even tomorrow. I hope some of you will help to speed its realization. But there are only a few people whose inclinations and abilities lie in that direction.

WHAT YOU CAN DO

Everyone can help in some way. There is bound to be something you can do to encourage regular, periodic health examinations—for expectant mothers, infants, preschool and school children, industrial and other workers, people in rural areas—for anyone and everyone. As an individual or through your church, clubs, trade union, parent-teacher association, or other organizations, you can help make the examinations that already exist better and more easily available, and you can encourage people to take advantage of them.

Perhaps you can extend or add to these examinations. How would your lodge or club, business or industry, feel about providing its members and their families with medical examinations on a free or low-cost basis? How would your community respond to the idea of medical tests for those who use the swimming pool? Shouldn't you insist on having the personnel of your children's camp, and the campers themselves, examined? I have been astonished by the fact that some parents want to know whether a camp has checked the social background of the young-

sters with whom their children will come in contact—and fail to find out whether the camp has checked their physical condition.

Why shouldn't *your* town or the factory in which you work have the advantages of the *partial* physical examinations which may be readily available? Countless people have had chest-films made in mobile x-ray units that come practically to their doors. Tests for diabetes have been provided in a number of communities.

As people come to accept such examinations and tests as a part of their regular lives, diseases can be prevented or cured without arousing alarm. Some years ago, anybody who was going to have a chest x-ray taken would probably lie awake worrying all through the previous night. Today, people sail in and out of such x-ray examinations without even asking when they will learn the results. It is mere routine to them. Similarly, young people take their "physicals" in school and college as a matter of course.

When procedures become routine, the fears connected with them become minimal. Soldiers know that. So do civilians. Their terror of bombs during the war was greatly reduced when there was a regular routine procedure for them to follow.

Why, for example, should any woman have to decide "Should I, or shouldn't I, have a test made for cancer of the womb?" (see page 630) or a man have to make up his mind when and how often his blood pressure should be taken? These and similar tests should become routine affairs. In this way, we could all have the benefits that come with knowledge, and yet avoid the anxiety of having to make repeated decisions.

THE CALCULATED RISK IN HEALTH

A long-range program of health education and routine medical examinations will be extremely important in preventing us from becoming hypochondriacs. In addition, each of us must realize that, no matter how well we guard against it, we cannot entirely eliminate the possibility of disease or accidental injury. At present, and in the foreseeable future, there will always be a chance that sickness may strike. If we are realistic, we will accept the *concept of calculated risk in health*.

I can best explain this by discussing the individuals I mentioned on page 809 who worried about smoking, being overweight, having high blood pressure or cancer of the breast. What could I—or any doctor—tell them?

On the basis of present medical knowledge, the biology teacher whose blood pressure was a little high was running practically no risk at all,

and there was no definite evidence that putting himself on a low-cholesterol diet would do any good. The college student's smoking might, to a slight degree, increase his chances of some day getting a cancer of the lungs. The middle-aged businessman would, statistically speaking, live longer if he lost 25 pounds. About the woman patient: there is no doubt that the danger from cancer of the breast is tremendously reduced if it is detected early.

These problems varied, and I discussed each of them individually. But I said substantially the same thing to all four people regarding their attitude toward the risks they ran.

"We all run some risks every day of our lives," I pointed out. "If we walk across the street we may be hit by an automobile and killed or maimed. Riding in a train, subway, or car may mean an accident. How do you react to this?"

Normal, sensible people do not react by staying at home and trying to protect themselves by withdrawing from life in a psychopathic manner. They are not continually tense and frightened because of the potential dangers they face. On the other hand, they do not ignore the existence of these dangers. They don't cross the street without looking where they're going, or drive seventy miles per hour on an icy road, or dive into the water without knowing how deep it is. In other words, the sensible, normal person is neither an *ostrich* nor an *alarmist*. He is what I call an *alertist*.

Suppose you want to go on an automobile trip over a holiday weekend. You know that you run a greater danger of having an accident than you would on an ordinary weekend, or during the week. You weigh these risks. If you think they are going to worry you too much, you may decide to take the train. If you make up your mind to drive, you may decide to reduce the hazards you face by leaving early in order to escape the heaviest traffic. Undoubtedly you will take the precaution of having your brakes, tires, and lights checked before you leave. In other words, you calculate the risk as well as you can, you decide whether or not you want to face it, and you take steps to minimize it. After that, you tell yourself it is "in the lap of the gods," and don't let worry spoil your weekend.

That is the attitude I hope you will take toward your health. Be an *alertist*, not an *ostrich* or an *alarmist*. Here are some specific suggestions:

1. Try to estimate the risks. To do this in regard to your health, you must have a certain amount of information, just as you must know certain facts in order to avoid unnecessary dangers when you drive a car. You can, and should, have yourself and your car regularly checked by an expert. Unfortunately, most people can't take a doctor or a garage

mechanic along with them wherever they go. They have to be able to evaluate certain risks themselves.

I do not mean to imply that you (or, in most cases, even a scientist) can determine *exact* percentages regarding various risks to your health. But we can arrive at an approximate estimate of them.

For example: although a rise in blood pressure must be regarded as a danger signal, it does not necessarily mean trouble. If certain potentially serious conditions can be ruled out by a thorough examination, a few points of elevation in the blood pressure need cause no concern. The risk, having been sensibly calculated, can be dismissed. There is no need to diet or avoid all exercise.

At the other extreme: anyone who takes a narcotic (morphine, cocaine, or heroin) regularly without medical supervision will become addicted to it. In such cases the risk is almost a certainty. The only time a doctor is justified in ignoring it is when a patient is suffering from a painful, fatal disease.

Most risks lie between these extremes. Kissing anyone who has active tuberculosis of the lungs is extremely dangerous. People have been known to do so without catching the disease. But no sensible person will deliberately take chances by kissing a tuberculous person on the mouth.

How about smoking and cancer? This problem is more complicated. At the present time we cannot say just how much connection there is between the two. In my opinion, there is enough evidence to indicate that anyone with a definite family history of cancer, especially of the lungs, lips, tongue, and larynx, should consider giving up smoking, or at any rate should smoke only in moderation. He or she should also avoid trying to get that last puff out of a cigarette, unless it is in a cigarette holder or filter. And such individuals should be specially alert in watching for signs of cancer such as hoarseness and sores on the mouth, lips, and tongue. Persons who regularly smoke large numbers of cigarettes, and inhale deeply, might be wise to have their lungs x-rayed twice a year.

2. Don't try to eliminate all health risks. In the first place, as I said before, it isn't possible to do this and still lead a normal life. In the second place, it defeats its own purpose. I have often had people ask me to tell their beloved parents not to do this, that, and the other in the hope of prolonging their lives. Many of these suggestions are good, but occasionally they reach the point where I have to say, "What use will a few more years of existence be to your parents if they can't do anything they enjoy? Do you want them to live like *vegetables* instead of *humans*? Besides, there is no guarantee it will actually prolong their lives."

I was struck by this fact in the case of a mother who lived alternately

with her two daughters. One of them was quite well to do, and the old lady was waited on hand and foot while in her home. The other daughter, who had a large family and a modest income, came to me saying that her sister had offered to keep their mother permanently. "Do you think I ought to let her, for mother's sake?" she asked. "She insists on washing the dishes and helping out in other ways while she's with me, and she's so feeble I know it can't be good for her."

I surprised her by answering, "Theoretically, your mother is better off when she doesn't have to exert herself. Actually, however, she's in better condition during the time she stays with you. Knowing that she's being useful more than makes up for the added strain."

This brings me to my third suggestion:

3. Remember that you are a person, not a statistic. Statistics are of great help in calculating the risks we run. But they do not tell the entire story. Each of us is an individual, not a number on a piece of paper. That is why doctors feel they must see and examine their patients, and not depend on laboratory tests alone for their diagnoses. As the medical saying goes, "It's just as important to know what kind of patient the disease has, as to find out what kind of disease the patient has."

It is much safer, statistically speaking, not to be obese in later life. Yet we all know people who are somewhat overweight and still lead long, happy, and healthy lives. I am inclined to doubt that Winston Churchill, Queen Wilhelmina, and Sophie Tucker (to give just a few examples) would have been any better off had they dieted. In fact, I've known some really fat people who were in excellent health until they tried to lose weight. Then they became tense and irritable and suffered as a result. I also know a man with high blood pressure who had been told to avoid all excitement, including sexual intercourse. When he followed this advice it had a bad effect on his blood pressure—as well as his relationship with his wife.

The woman who could not make up her mind about the lumps in her breast should, as I told her, admit frankly, "Self-examination of the breasts is not for me." Her doctor was quite willing to make an arrangement for a brief examination of her breasts at intervals between her regular checkups. She told me she felt she was being silly, but I convinced her that no one need be ashamed of being human.

If some disease happens to alarm you unduly, because someone you know suffered from it, or for any other conscious or unconscious reason, do not feel ashamed of your fears because they seem exaggerated. Try to understand yourself and accept yourself. *You* are important.

As our rapidly growing understanding of psychosomatic illnesses has shown us, tension and worry can cause, or aggravate, a number of dis-

eases. Thus, to a certain extent at least, each individual tends to make his own luck.

Today, when medicine has taken such tremendous strides toward eliminating, curing, and controlling disease, there is little need for anyone to avoid the facts. By learning to understand the marvelous bodies and minds with which we have been endowed, we can enjoy the extra years and the additional good health medical science has made possible.

Some of these benefits will come our way regardless of what we do. However, to reap the *full* benefit, without becoming hypochondriacs and worrying unduly, we must each play our part. We must be informed and alert, rather than ignorant or alarmed.

Because of my complete confidence that this will be your attitude, I have written this book.

DICTIONARY OF MEDICAL TERMS

[A G L O S S A R Y]

THIS is a comprehensive set of definitions of medical terms intended to be used as a *supplement* to the text of the book itself. Terms discussed at some length in the text may not be found here, but the page references for the more complete discussions will be readily located in the Index.

Most medical terms can be broken down into parts. By understanding the meaning of these parts you can figure out the meanings of many terms you may never have seen before. Some of them refer to sections of the body such as the following:

Term	Meaning	Example
aden-	gland	adenoma
cardi-	heart	cardiogram
-cyte	cell	erythrocyte
derm-	skin	dermatitis
gastr-	stomach	gastric juice
hem- or -em-	blood	hematuria
		anemia
lingu-	tongue	lingual
myel-	spinal cord or marrow	poliomyelitis
myo-	muscle	myoma
nephr- or ren-	kidney	nephrectomy
		adrenal
neur-	nerve	neuritis
os- or ost-	bone	ossification
		osteitis
psych-	mind	psychiatry
pulmo-	lung	pulmonary

Others describe position, shape, or amount:

a-	lack of	apnea
dys-	bad	dysphagia
endo-	inside	endothelium
epi-	upon, in addition	epiglottis
hyper-	above, extreme	hyperthyroid
hypo-	under, below	hypodermic
macro-	long, large	macrophage
mal-	bad, abnormal	malnutrition
micro-	small	microcardia

Term	Meaning	Example
Some refer to substances of the body:		
pn-	gas	pneumonia
py-	pus	dyspnea
-rrh-	flow	empyema
		hemorrhage
Suffixes may mean condition, operation, or study:		
-algia	pain in	neuralgia
-ectomy	cutting out	tonsillectomy
-ia or -osis	disease	anemia
		neurosis
-itis	inflammation	appendicitis
-lysis	dissolving or loosening	hemolysis
-mania	excessive preoccupation	nymphomania
-oid	similar to	adenoid
-ology	study of	neurology
-oma	tumor	carcinoma
-ostomy	making an opening	colostomy
-otomy	cutting into	lobotomy
-phobia	fear	claustrophobia

A

abasia (ah-bay'zhe-ah). Inability to walk because of an injury to the nerves or brain affecting muscle coordination.

abdomen (ab-do'men). The portion of the body between the chest and pelvis. It is a cavity separated from the chest area by the diaphragm. It contains the stomach, large and small intestines, liver, spleen, pancreas, kidneys, and other structures.

aberration (ab-er-ay'shun). A deviation from the normal.

abort (ah-bort'). 1. To miscarry or induce the expulsion of a fetus before it is able to live, usually within the first four months of pregnancy. 2. To stop the development of a disease.

abrasion (uh-bray'zhun). 1. Wound caused by skin being scraped off. 2. In dentistry, the wearing away of the surface of a tooth as a result of chewing.

abscess (ab'ses). A collection of pus in an area where the tissues have broken down.

absolute alcohol (al'ko-hol). Alcohol with less than 1% water.

accommodation (uh-kom-o-day'shun). In the eye it refers to the change in the curve of the lens to bring objects to a focus, the curve becoming more convex the closer the object.

acetanilid (ass-eh-tan'il-id). A medicine which relieves pain and reduces fever.

acetone (ass'eh-tone). A substance found in small amounts in normal urine and in larger amounts in the urine and blood in cases of diabetes.

acetophenetidin (ass-et-o-feh-net'id-in). A medicine used in treating fevers and neuralgias. It relieves pain and reduces fever.

acetylcholine (ass-et-il-ko'leen). The substance believed to carry the nerve impulse at the nerve ending.

Achilles' (ah-kil'eez) **tendon**. The tendon at the back of the ankle that connects muscles of the leg to the bone.

achromycin (ak'ro-my'sin). See Tetracycline.

acidosis (ass-ed-o'sis). A condition in which the amount of sodium bicarbonate (alkali) in the blood is reduced. It is associated with several disorders including advanced diabetes.

acne (ak'nee). Pustules caused by inflammation of the oil glands of the skin,

- usually on the face, back, and chest; pimples.
- acromegaly** (ak-ro-meg'uh-li). A chronic condition caused by an overactive pituitary gland. The facial features, hands, and feet become enlarged.
- acrophobia** (ak-ro-fo'bi-uh). Fear of high places.
- ACTH**. Abbreviation for adrenocorticotrophic hormone, a substance produced by the pituitary gland and capable of releasing cortisone and other hormones from the adrenal gland.
- actinomycin** (ak-tin-o-my'sin). Antibiotic substance isolated from a fungus and active against many bacteria and fungi.
- actinomycosis** (ak-tin-o-my-ko'sis). Infection with a type of fungus. It may affect lungs, skin, intestines, or jaw.
- acute** (uh-kyoot'). When referring to disease it means one having a short course; not chronic.
- Adam's apple**. The projecting portion of the larynx.
- addict** (ad'ikt). One who habitually follows some practice, especially the use of drugs or alcohol.
- Addison, Thomas** (1793-1860). English physician who gave the classic description of pernicious anemia and contributed to knowledge of the ductless glands.
- adenitis** (ad-eh-nigh'tis). Inflammation of the glands.
- adenoid** (ad'uh-noyd). Means glandlike; in the plural it refers to a tonsil-like growth in the small lymph glands in the back of the nasal passage where it joins the throat.
- adenoma** (ad-eh-no'mah). A glandlike growth, usually a benign neoplasm. If malignant, it is called *adenocarcinoma*.
- adhesion** (ad-hee'zhun). 1. Union of two surfaces abnormally; any fibrous band which connects them. 2. In dentistry, the force which holds upper dentures in place without vacuum chambers.
- adipose** (ad'eh-pose). Fatty.
- adolescence** (ad-uh-less'ns). The period between puberty and adulthood.
- adrenal** (ad-rec'e'nl) **gland**. A small gland located just above the kidney. Its secretions affect the function of glands and organs in many important ways. (See cortisone, ACTH.)
- adrenalin** (uhd-ren'uh-lin). A substance produced by the adrenal gland which affects the rate of heartbeat and blood circulation and controls muscles of the viscera. It postpones muscle fatigue, and is released in larger quantities in times of stress permitting more activity than usual.
- adulterate** (uh-duhlt'er-ate). To add one substance to another for the purpose of cheapening or weakening it.
- aerobe** (air'o-be). A germ which needs air or oxygen to live.
- aerosol** (air'o-sol). A spray for the purpose of sterilizing the air of a room, or an atomized solution to be inhaled.
- Aesculapius** (es-kuh-lay'pi-uhs). The god of medicine of Greek mythology, son of Apollo, known for his powers of healing.
- afterbirth** (af'ter-berth). The special tissues associated with the development of a baby, such as the placenta, which are expelled after the birth of the baby.
- agalactia** (ah-gah-lak'she-ah). Failure to produce milk after the birth of a child.
- agar** (ag'ar). A gelatinous substance extracted from seaweed and used to treat constipation. It is also used for growing bacteria and other microorganisms.
- agglutination** (ah-gloo-tin-ay'shun). Clumping; the drawing together of bacteria suspended in fluid when a serum is used against them.
- agranulocytosis** (ah-gran-yoo-lo-sigh-to'sis). Decrease in the number of granular white cells in the blood. It is often accompanied by ulcerlike sores in the throat and other mucous membranes and sometimes follows use of sulfonamides or other drugs, such as Pyrimidon.
- ague** (ay'gyoo). Malarial fever; any chill.
- albino** (al-bigh'no). A person with little or no pigment in skin, hair, and eyes.
- albumin** (al-byoo'min). A protein commonly found in plants and animals and in the white of eggs. Its presence in urine (albuminuria) may be associated with disease.
- alcoholism** (al'ko-hol-izm). Poisoning with alcohol.
- chronic alcoholism**. Unhealthy condition chiefly in the nervous and digestive systems caused by habitual use of alcohol in poisonous amounts.

- alimentary** (al-uh-men'tuh-ri). Relating to food.
- alkali** (al'kuh-ligh). Opposite of acid; capable of neutralizing acids. The chief one in the body is sodium bicarbonate.
- allergy** (al'er-ji). Hypersensitivity to one or more specific substances, usually protein. Hives, rash, or coldlike symptoms may result from exposure to the substance. Hay fever is one example of allergic diseases.
- ambivalence** (am-biv'uh-lens). Having opposing feelings, such as love and hate, toward the same object.
- ameba** (uh-mee'buh). A one-celled animal, such as a protozoan, that moves by changing shape and flowing along. Amebic dysentery is caused by organisms of this type.
- ameboid** (uh-mee'boyd). Moving like an ameba.
- amino acid**. An organic acid containing nitrogen. Amino acids are used by the body in building muscle and other tissues. The essential amino acids which must be provided by eating protein foods are as follows:
- | | |
|------------|---------------|
| arginine | methionine |
| histidine | phenylalanine |
| isoleucine | threonine |
| leucine | tryptophane |
| lysine | valine |
- Other important amino acids are alanine, cystine, glycine, serine, and tyrosine.
- ammonia** (uh-mohn'yuh), **aromatic spirits of**. An ammonia solution which is a stimulant when inhaled, used for reviving after fainting spells.
- amnesia** (am-nee'zhuh). Loss of memory.
- amniotic** (am-nee-ot'ik) **fluid**. The watery fluid surrounding the developing fetus.
- amputation** (am-pyoo-tay'shun). Cutting off.
- amylase** (am'il-ays). An enzyme which breaks down starch; found in saliva, pancreatic juice, etc.
- anaerobe** (an-air'obe). A germ that lives without air or free oxygen.
- analgesic** (an-al-jee'zik). Pain reliever.
- anaphylactic** (an-uh-figh-lak'tik) **shock**. A violent, possibly fatal, attack caused by the injection of a substance to which the body has become sensitive from previous injection. Horse serum which is used for tetanus antitoxin sometimes causes this reaction.
- anatomy** (uh-nat'uh-mi). Body structure.
- ancylostomiasis** (an-sil-os-to-my'uh-sis). Hookworm disease.
- androgen** (an'dro-jen). A substance, usually a hormone, that produces male characteristics (see testosterone).
- androsterone** (an-dros'ter-ohn). A specific hormone that produces male characteristics. It is excreted in the urine.
- anemia** (uh-nee'mi-uh). Deficiency in the blood brought about by a decrease in the number of red blood cells or in the hemoglobin of the blood.
- anesthesia** (an-uhs-thee'zhi-uh). Loss of feeling.
- general anesthesia**. Loss of feeling in the entire body.
- local anesthesia**. Loss of feeling limited to a particular area.
- anesthetic** (an-uhs-thet'ik). A substance used to produce anesthesia.
- aneurysm** (an'yoo-rizm). A blood-filled sac formed by an abnormal widening in a blood vessel.
- angina** (an-jigh'nuh). Any disease in which one gets a suffocating feeling.
- angina pectoris** (pek'tuh-ris). Heart disease in which the patient suffers from suffocating contractions in the chest and pains radiating from the heart down the left arm.
- Vincent's angina**. Trench mouth; a very contagious infection of the mouth.
- ankylosis** (ang-kil-o'sis). Stiffness of a joint.
- anomaly** (uh-nahm'uh-li). Any deviation from the usual, such as in location or shape.
- Anopheles** (uh-nof'el-eez) **mosquito**. The mosquito that carries the parasites that cause malaria.
- anorexia** (an-o-rek'si-uh). Loss of appetite.
- anoxia** (an-ahk'si-uh). Lack of oxygen in the body.
- Antabuse** (an'tuh-byoos). A substance used in treating alcoholism. It makes drinking unpleasant.
- antacid** (ant-ass'id). A substance that neutralizes acid.
- ante partum** (an-ti-par'tum). Before childbirth.
- aethrax** (an'thraks). A disease of cattle which can also occur in man either as

- a hard swelling of the skin or internally as infection of lungs, intestines, etc.
- antibiotic** (an-tigh-high-aht'ik). A substance produced by an organism that tends to inhibit the growth of other organisms. Usually refers to extracts of molds or bacteria, such as penicillin, streptomycin, Aurcomycin, Terramycin.
- antibody** (an'teh-bod-ee). A type of substance formed in the body in immune or allergic persons. The antibody produced by each disease or antigen is different.
- antidote** (an'ti-doh't). A substance that can counteract the effects of poison.
- antigen** (an'ti-jen). A substance that induces the production of antibodies in the blood. It is usually a protein such as is found in germs or serum.
- antihistamine** (an-ti-his'tuh-min). A compound that counteracts the effects of histamine; used in various allergic conditions, such as hay fever, serum sickness, etc.
- antipyretic** (an-ti-pigh-ret'ik). Relieving fever.
- antiscorbutic** (an-ti-skor-byoo'tik). Correcting or curing scurvy.
- antiseptic** (an-ti-sep'tik). A substance that prevents the growth of germs.
- antiserum** (an-ti-seer'um). Blood serum that contains antibodies; sometimes given to patients to help them fight disease; also used in diagnosis to identify bacteria from a patient by the antibody-antigen reaction.
- antitoxin** (an-ti-tahk'sin). A substance produced in the body to act against a poison.
- anuria** (ah-nyoo'ri-uh). Scanty urine.
- anus** (ay'nuhs). Outer opening of the rectum through which feces are expelled.
- anvil** (an'vil). Also called "incus"; one of the small bones of the middle ear, important in transmitting sounds.
- aorta** (ay-or'tuh). Largest artery of the body. It arises from the left ventricle of the heart, and branches from it carry blood to all parts of the body.
- aphasia** (uh-fay'zhi-uh). Inability to speak due to brain damage. The voice box and other organs of speech may be uninjured.
- apnea** (ap-nee'uh). State of not breathing.
- apoplexy** (ap'uh-plek-si). A stroke producing paralysis and coma.
- appendicitis** (uh-pen-di-sigh'tis). Inflammation of the vermiform appendix, which is a worm-shaped projection from the large intestine on the right side of the body.
- aqueous** (ay'kwi-uhs) **humor**. The vitreous liquid which fills part of the eyeball.
- areola** (uh-rec'o-lah). 1. One of the spaces in tissue, such as those in the lung. 2. A pigmented ring around a central point, such as the nipple of the breast.
- Argyrol** (ahr'ji-rohl). An antiseptic for gonorrhea and eye inflammations; it is a compound of silver and protein.
- arrhythmia** (ah-rith'mi-uh). Variation from the normal rhythm of the heart beat.
- arsenical** (ar-sen'ik-uhl). Compounds which contain arsenic. Before the discovery of antibiotics they were the best treatment for syphilis. Arspheamine, or Salvarsan, was one.
- arteriosclerosis** (ahr-tee-ri-o-skli-ro'sis). Hardening of the arteries; a condition in which the walls of the arteries become thick and hard from deposits of lipids and calcium. Symptoms depend upon what part of the body is supplied by the affected arteries.
- artery** (ahr'ter-i). Blood vessel that carries blood away from the heart to other parts of the body.
- arthritis** (ahr-thrigh'tis). Inflammation or pain in the joints.
- articulate** (ahr-tik'yoo-lit). Jointed.
- ascites** (ah-sigh'teez). Accumulation of fluid in the abdomen.
- ascorbic** (as-kawrb'ik) **acid**. Vitamin C; a substance found in fruit, such as oranges and lemons. It is needed by the body to prevent scurvy.
- aseptic** (uh-sep'tik). Free from poisonous material or germs.
- asphyxia** (as-fik'si-uh). Suffocation from lack of air or from breathing carbon monoxide.
- aspirator** (as'pi-ray-tor). Device for removing liquids from the lungs or other body cavities.
- aspirin** (as'pi-rin). Acetylsalicylic acid; a relatively harmless drug used to relieve pain and reduce fever.
- assimilation** (uh-sim-il-ay'shun). Process in which the body transforms digested food into tissues.

astigmatism (uh-stig'muh-tizm). Inability to focus the eye properly because of an irregularity in one of the surfaces of the eye.

astrigent (uhs-trin'jent). Causing contraction. Such substances are used to lessen secretions or to stop bleeding.

Atabrine (at'uh-breen). A medicine used to treat malaria; developed when quinine was scarce.

athlete's, (ath'leets) **foot**. Fungus infection of the foot in which small sores and cracks appear on the skin, particularly between the toes.

atrophy (at'ruh-fi). Reduction in size; wasting.

atropine (at'ro-peen). A medicine used to relax muscles of the intestines, lungs, and other internal organs. Also used for dilating the pupil of the eye.

Auenbrugger (ow-en-broog'er). **Leopold Joseph** (1722-1809). Austrian physician who was the first to use percussion of the chest as an aid in diagnosis.

aura (aw'ruh). Sensation which precedes an epileptic attack.

Aureomycin (aw-ree-o-migh'sin). An antibiotic produced by a *Streptomyces* fungus. It is active against many bacterial and viral infections. It can clear up some staphylococcal and streptococcal infections that resist penicillin. Bad side effects are relatively rare.

auricle (aw'reh-kl). Means earlike; in the heart it refers to either of the two upper chambers which receive blood from the veins.

autonomic (aw-to-nom'ik) **nervous system**. That part of the nervous system that controls organs not consciously controlled, such as blood vessels, glands, and digestive organs.

autopsy (aw'tahp-si). Examination of a body after death.

avitaminosis (ay-vigh-tuh-min-o'sis). Disease due to lack of vitamins.

axilla (ak-sil'uh). Armpit.

B

B complex. A group of water-soluble vitamins which occur together in nature. Some of them are essential for health, the most important being niacin, riboflavin, and thiamin.

Babinski's (bah-bin'skee) **reflex**. The automatic extension of the toes when

the sole of the foot is stroked, a sign of a certain type of brain injury.

bacillus (buh-sil'uh). One of a group of rod-shaped bacteria. Some examples are:

Typhoid bacillus. Cause of typhoid fever.

Tubercle bacillus. Cause of tuberculosis.

Bacillus diphtheria. Cause of diphtheria.

Bacillus leprae. Cause of leprosy (Hansen's disease).

Bacillus pertussis or **Bordet Gengou bacillus**. Cause of whooping cough.

Shiga's bacillus. Cause of a type of dysentery and summer diarrhea of infants.

bacitracin (bas-eh-tray'sin). An antibiotic from *Bacillus subtilis*. It is active against infections of cocci and other bacteria and is used on skin infections. It is too toxic for internal use.

bacteremia (bak-teh-ree'mi-uh). Presence of bacteria in the blood.

bactericidal (bak-ter-eh-sigh'dl). Causing the death of bacteria.

bacteriological (bak-tier-ree-o-log'ikl). Pertaining to the study of bacteria.

bacteriolysin (bak-tier-ree-ol'is-in). Substance which dissolves bacteria.

bacteriophage (bak-tier'ree-o-fayj). A specific type of ultramicroscopic agent which destroys bacteria.

bacterium (bak-tier'i-um), pl. **bacteria**. Germ; one-celled organism not visible without the aid of the microscope. Some cause diseases.

bag of waters. Amnion; the sac in which the fetus and its surrounding fluid are held.

baker's itch. Irritation on the hands caused by yeast.

baker's leg. Knock-knee.

BAL. Abbreviation for **British Anti-Lewisite**; an antidote for metallic poisons such as arsenic and mercury.

balm (bahm). A soothing medicine.

balneotherapy (bahl-nee-o-thair'uh-pi). Treatment of disease with baths.

bandage (ban'dij). Gauze or other material used to wrap or cover a wound or part of the body.

abdominal bandage. A wide support worn around the hips for support, sometimes used in pregnancy.

- elastic bandage.** Rubber bandage used to provide constant pressure on an area; used for sprains to prevent swelling.
- bank.** Place, usually in a hospital, where reserve stocks of body fluids or parts are kept. At present only blood, plasma, arteries, nerves, cartilage, and corneas are kept.
- eye bank.** Reserve stock of corneas used for corneal transplants.
- Banting, Frederick G.** (1891-1941) and **Charles H. Best** (b. 1899). Canadian researchers who isolated insulin from the pancreas and used it in treating diabetic patients.
- barber's itch.** Infection of the hair follicles on the face. One type which is caused by the streptococcus produces a burning, itchy area on the face, may even develop pus-filled swellings. Another type is a ringworm infection which causes itching on the lower part of the jaw.
- barbiturates** (bar-bit'yoor-ayts). A group of compounds which act as sedatives, hypnotics, or sleep inducers. Phenobarbital is one of the most common.
- barium** (hair'i-um). A metallic element. It does not permit the passage of x-rays and so is often given to patients being x-rayed to make the organ being observed stand out on the film.
- barium meal.** Milk containing a barium compound which is swallowed before an x-ray of the digestive tract.
- barium enema.** Injection of fluid containing a barium compound into the anus for x-rays of the rectum or intestines.
- barley** (bah'r'li) **water.** Water in which barley has been boiled. It is used in treating diarrhea in children.
- Barton, Clara** (1821-1912). American nurse who tended soldiers during the Civil War and was influential in founding the Red Cross, of which she was first president.
- basal metabolism** (bay'sl meh-tab'o-lizm) **test.** A test for thyroid activity. It depends upon the amount of energy the body uses when at rest. The oxygen intake is measured.
- base.** Alkali; a substance capable of neutralizing acid.
- base plate.** Trial plate for artificial dentures.
- basophil** (bay'so-fil). A body cell that stains with alkaline dyes.
- basophobia** (bay-so-f'o'bi-uh). Fear of walking or standing erect.
- bath, alcohol.** Sponging the body with dilute alcohol, sometimes used to reduce fever.
- mustard bath.** Bath with mustard added to the water.
- bathyanesthesia** (bath-ee-an-es-thee'zi-uh). Loss of feeling in parts of the body below the surface.
- bayonet** (bay'uh-net) **leg.** Condition in which the knee joint is immovable.
- BCG.** Abbreviation for *Bacillus of Calmette and Guérin*; an organism which is used in a vaccine for producing immunity to tuberculosis.
- beat knee.** Inflammation of the tissues of the knee.
- Beaumont** (bo'mont), **William** (1785-1853). American army surgeon who described the digestive process. He observed the gastric fluids and food changes in Alexis St. Martin, a Canadian who had a gastric fistula from a gunshot wound.
- bedpan.** Shallow vessel of suitable shape in which a patient can urinate or defecate in bed.
- bedsore** (bed'sor). Ulcerlike sore which is caused by the pressure of the patient's body against the bed; decubitus ulcer.
- beef tea.** Water in which lean beef has soaked or in which beef extracts are dissolved.
- behaviorism** (bi-hayv'yer-izm). A theory that attempts to explain human emotional reactions.
- belching** (belch'ing). Raising gas.
- belladonna** (bel-uh-dahn'uh). A poisonous substance obtained from a plant called the deadly nightshade. Atropine is the active alkaloid in belladonna. In proper dosages, belladonna and atropine are useful medicines.
- Benadryl** (ben'uh-dril). An antihistamine used in treating allergic reactions.
- bends.** Caisson disease.
- benign** (bi-nighn'). Not recurrent, harmless.
- Benzedrine** (ben'zuh-dreen). A compound having stimulating properties; also used in nose sprays and inhalants.

- henzidine** (ben'zi-deen) **test**. A test used to determine whether blood is present in feces, urine, or other material.
- beriberi** (behr'i-behr'i). A disease resulting from lack of vitamin B₁ (thiamin) in the diet.
- Bernard** (ber-nar'), **Claude** (1813-1878). French physiologist who made many important discoveries about the liver, the pancreas, and the sympathetic nervous system.
- bicarbonate** (big-kar'bo-nuht). A substance which tends to neutralize the effects of both acids and bases found in the blood.
- bicarbonate of soda**. Common compound useful for minor digestive upsets.
- biceps** (big'h'seps). Muscle either of the upper arm or thigh.
- bichloride of mercury** (big-klo'rightd uv mer'kyoo-ri). Germicide; highly toxic if swallowed.
- bicuspid** (big-kuh'spid). A tooth having two "prongs" or cusps. There are normally eight in the mouth, two on each side of both jaws between the canines and the molars.
- bifocal** (big-fo'kl) **spectacles**. Spectacles which have two lenses cemented together, the lower one for reading or close vision, and the upper one for distance.
- bifurcation** (big-fer-kay'shun). Division into two parts.
- bile**. Bitter fluid secreted by the liver. It aids in digesting food. The yellow bile secreted by the liver is stored in the gall bladder, where it becomes dark (black bile).
- biliousness** (bil'yuh's-ness). Type of indigestion believed to be caused by an excess of bile.
- bilirubin** (bil-ee-roo'bin). Brownish substance in bile. It is found in the urine and blood in cases of jaundice.
- Binet** (bin-ay') **test**. Method of testing mental capacity.
- binocular** (bin-ahk'yuh-ler) **vision**. Seeing with the use of both eyes.
- biology** (big-ahh'uh-ji). The study of living things.
- biopsy** (big'op-si). Removal of a piece of tissue to be examined microscopically for diagnosis.
- biparous** (bip'uh-ruhs). Producing two children at one birth.
- birth control**. Prevention or regulation of conception.
- birthmark**. A colored area, a mole, or a slightly raised portion of skin which is present on the body at birth.
- bisexual** (big-seks'yoo-uhl). Having characteristics of both male and female.
- black death**. Bubonic plague; so called because of the dark appearance of the skin from numerous hemorrhages.
- blackhead**. A pustule formed around a skin pore plugged with fat secreted by the oil glands.
- black widow, black-widow spider**. A spider whose bite is poisonous though rarely fatal. The variety found in eastern United States has a characteristic red hourglass on its lower side.
- bladder** (blad'er). Sac which holds urine.
- blastomycosis** (blas-toh-migh-ko'sis). A disease caused by a fungus. It usually affects the lungs but may involve the whole system.
- bleb**. Raised area on the skin; blister.
- bleeding time**. Time required for bleeding from a skin prick to stop; normally 1 to 5 minutes.
- blind spot**. The spot where the optic nerve enters the retina. This area of the eye is not sensitive to light.
- blister** (blis'ter). Collection of fluid in the skin causing a raised area.
- blood blister**. Blister containing blood.
- fever blister**. Sore on the lips caused by a virus (*Herpes simplex*).
- bloat**. Puffiness, caused by accumulation of gas or fluid.
- block, nerve**. A form of local anesthetic in which nerve impulses are interrupted by injection of a drug.
- blood corpuscle** (kawr'puhsl). A blood cell, either a red cell (erythrocyte) or a white cell (leucocyte).
- blood count**. The number of red cells and white cells in a standard volume of blood. Normally there are about 4.2 to 5.5 million red cells and 5 to 10 thousand white cells per cubic millimeter.
- blood donor** (doh'ner). One who gives blood to be used for blood transfusions.
- blood plasma** (plaz'muh). The liquid part of the blood after the cells have been removed.

- blood serum** (seer'um). The fluid which separates from clotted blood.
- blood poisoning**. Infection in the blood. It may be carried through the blood to all parts of the body.
- blood pressure**. The force of the blood in the blood vessels. It is measured by a sphygmomanometer, which consists of a cuff into which air can be pumped, and a pressure gauge. Pressure readings are made during both the systolic and diastolic phases of the heartbeat.
- blood vessel**. An artery or vein.
- blood shot**. Suffused with blood.
- blood type**. Hereditary factors in the blood, e.g., A, B, AB, or O. It is important to determine the blood types of both donor and patient before a blood transfusion, as certain combinations cause agglutination of the blood cells. When blood is typed it is also tested for the Rh factor, another hereditary factor important in blood transfusion.
- blue baby**. A baby born with a malformation of the heart. The blue color results from lack of oxygen in the blood.
- boil**. Furuncle; a round, tender, pus-filled, raised area on the skin, caused by bacterial infection, usually staphylococci.
- booster shot**. Injection of a vaccine to reinforce an immunity obtained from previous vaccine injections.
- boric** (boh'rik) **acid**. A white powder which is used in skin ointments and in water solution as a mild antiseptic.
- botulism** (baht'yoo-lizm). Highly fatal food poisoning from improperly canned food. It is caused by bacteria that grow in the absence of air and produce poison. Symptoms are headache, weakness, constipation, and paralysis. The poison is easily destroyed by boiling.
- bowel** (bow'el). Intestine.
- brachial** (bray'ki-al). Relating to the arm.
- Braille** (brayl) **system**. Method of printing words by using raised dots which the blind can "read" by touching with the finger tips.
- brain waves**. Electric impulses given off by the brain. Various patterns are associated with abnormal conditions.
- breakbone** (brayk'bohn) **fever**. Dengue.
- breast, broken**. Abscess on the breast.
- breast, chicken**. Malformation in which the breast bone is very prominent. It may result from rickets.
- breast pump**. Device to empty milk from the breast.
- breech presentation**. Birth of a baby with the buttocks first.
- bridge**. A device for replacing one or more missing teeth. It is held in place by being fastened to the adjoining natural teeth.
- Bright's disease**. Nephritis; a chronic disease of the kidneys. It is named for Richard Bright (1789-1858), the English physician who described this condition.
- bromide** (bro'mighd). Compound of bromine. Some are used as sedatives and pain relievers.
- bronchiole** (brahng'ki-ohl). Small air tube in the lung, a subdivision of the bronchus.
- bronchitis** (brahn-kigh'tis). Inflammation of the bronchi.
- bronchopneumonia** (brahng-ko-noo-mo'ni-uh). Inflammation of the bronchioles and lung tissue caused by bacterial infection.
- bronchoscope** (brahng'kuh-skohp). Tube-like instrument containing a light which can be inserted through the mouth down into the bronchi in order to examine them.
- bronchotomy** (brahng-kaht'uh-mi). Cutting into the trachea or a bronchus.
- bronchus** (brahng'kuhs), pl. **bronchi**. One of the two main branches of the windpipe (trachea).
- brush burn**. Injury caused by friction of a rapidly moving object.
- bubo** (byoo'boh). A painful swelling in a lymphatic gland, usually one in the groin or under the arm.
- bubos** (byoo'bohs). Leishmaniasis; a disease caused by protozoa spread by flies. Found in Asia and So. America.
- bubonic** (byoo-bahn'ik) **plague**. Infectious disease caused by bacteria spread by rat fleas.
- Bufferin** (bu'fer-in). An aspirin preparation containing an alkaline buffer to neutralize stomach acidity. Appears to be less irritating to the stomach than ordinary aspirin, and to act faster in the relief of headache.

bulbar (buhl'bar). Pertaining to the lower part of the brain stem.

bull (boo'la). A large bleb or blister.

bunion (buhn'yun). A swelling at the first joint of the great toe.

bursa (ber'suh). Small fluid-filled sac in the joints which helps cushion the bones against friction.

bursitis (ber-sigh'tis). Inflammation of a bursa. Movement of the joint affected is very painful in this condition.

butterfly patch. The characteristic mark on the face in lupus erythematosus.

butyn (byoo'tin). A local anesthetic for the surface of the eye and mucous membranes.

C

Caesarean (see-zair'ri-un) **section**. Delivery of a baby by cutting through the abdominal wall.

caffeine (kaf'een). Stimulant found in coffee and tea.

caisson (kay'sn) **disease**. Paralytic disease of people who work in caissons under high air pressure. The condition occurs when workers are brought into normal pressure areas too quickly, and bubbles of nitrogen form in the blood. Also called the bends.

calamine (kal'uh-mighn) **lotion**. A zinc oxide compound used to treat skin diseases and irritations.

calcaneus (kal-kay'ni-uhs). Heel bone.

calcareous (kal-kair'i-uhs). Containing lime; chalky.

calcification (kal-si-fi-kay'shun). Hardening due to calcium deposits.

calcium (kal'si-um). A chemical element which is the main material in bone and teeth and is also necessary for normal functioning of heart and other muscles.

calculus (kal'kyuh-luhs), pl. **calculi**. A stony mass in the gallbladder, kidney, or urinary bladder.

callus (kal'uhs). 1. Area where the skin has thickened and become hard, often as a result of friction. 2. The substance which forms around a broken bone that is starting to heal.

calomel (kal'o-mel). A mercury compound which acts as a purge.

calorie (kal'uh-ri). Measure of heat or energy, therefore a measure of the fattening properties of a foodstuff.

cancer (kan'ser). Malignant tumor; uncontrolled growth of cells which are usually larger and more like embryonic cells than the normal cells of the affected tissue.

canine (kay'nihn) **tooth**. The sharply pointed tooth located between the incisors and the premolars.

canker (kang'ker). Ulcerlike sore in the mouth or on the lips.

capillary (kap'i-lehr-i). Very small blood vessel.

carbohydrate (kahr-bo-high'drayt). A class of energy foods which includes sugars and starches.

carbolic (kahr-bahl'ik) **acid**. Phenol; a disinfectant.

carbuncle (kahr'buhng-kl). A hard pus-filled painful inflammation. It is similar to a boil but it is larger and has several openings.

carcinogen (kahr-sin'o-jen). A substance which can cause cancer.

carcinoma (kahr-si-no'muh). A cancer which started from epithelial cells (skin or mucous membranes).

cardiogram (kahr'di-o-gram). Tracing which shows the movements of the heart.

cardiovascular (kahr-di-o-vas'kyoo-lar). Pertaining to the heart and blood vessels.

caries (kair'eez). Decay in teeth or bone.

carotene (kair'o-teen). A pigment related to vitamin A and found in carrots.

carotid (kuh-raht'id) **arteries**. Arteries of the neck.

carpal (kahr'pl) **bones**. Bones of the wrist.

carrier (ka'ri-er). Person who has germs of a disease in his body but does not show symptoms of the disease.

cartilage (kahr'ti-lij). Gristle; white elastic tissue found around joints and forming the tip of the nose and the outer ear.

cascara (kas-kair'uh). A laxative or cathartic made from the dried bark of certain shrubs.

caseous (kay'si-uhs). Resembling cheese.

castor (kas'ter) **oil**. Oil obtained from a type of poisonous bean plant. It has a cathartic action.

castration (kas-tray'shun). Removal of the testicles or ovaries.

casts (kasts). Material which has hardened in body cavities and taken the shape of them. They are observed in

the urine or other discharges in certain diseases.

cataplexy (kat'uh-lep-si). A nervous condition in which the person goes into a trance and may not change position for an indefinite time.

cataract (kat'uh-rakt). Cloudiness in the eye lens.

catarrh (kuh-tahr'). Inflammation in nose or other mucous membranes accompanied by discharge of a great deal of mucus.

catatonic (kat-uh-tahn'ik). Relating to a behavior disturbance characterized by cataplexy (see above), and found most commonly in schizophrenia.

catgut (kat'guht). Thread or string prepared from sheep's intestines, used in surgery.

cathartic (kuh-thahr'tik). A substance that rapidly causes the bowels to move.

catheter (kath'i-ter). A tubelike instrument which is used for draining fluids from body cavities, such as the bladder.

cauliflower (kaw'li-flau-er) **ear**. A thickened and deformed ear seen in boxers. It is caused by the accumulation of fluid and blood clots in the tissue following injury.

cauterize (kaw'ter-ighz). To apply burning or caustic substances or instruments.

cecum (see'kum). Sac of the large intestine located where the large and small intestines join.

cell (sel). Structural unit of life consisting of a mass of jellylike protoplasm containing a nucleus and surrounded by a membrane.

cellulose (sel'yoo-lohs). Starchy material in plant cells.

cementum (see-men'tum). The thin hard outer layer of a tooth below the gum, bony in structure.

cerebellum (sehr-uh-bel'um). The part of the brain which coordinates movements.

cerebral cortex (sehr'uh-brl kawr'teks). Outer layer of the brain.

cerebral palsy (sehr'uh-brl pawl'zi). Partial paralysis and lack of muscle coordination caused by brain injury.

cerebrum (sehr'uh-brum). The main part of the brain. It is concerned with thinking, feeling, and voluntary activities.

cerumen (si-roo'men). Earwax.

cervix (ser'viks). The narrow lower part of the uterus.

chalazion (kuh-lay'zi-un). Tumor on the eyelid caused by an infection of a sebaceous (oil) gland.

chancre (shang'ker). The sore which is the first sign of syphilis. It starts as a papule which breaks down into a reddish ulcer.

chancreoid (shang'kroid). A soft nonsyphilitic sore in the genital area. It is caused by bacteria and spread by sexual contact.

charleyhorse (char'lee-hors). Soreness or stiffness of a muscle often resulting from athletics.

chaulmoogra (chawl-moo'gruh) **oil**. Oil used in treating leprosy.

chigger (chig'er). Larva of an insect which attaches itself to the skin causing the area to become itchy and inflamed.

chilblain (chil'blayn). Painful swelling of toes and feet from exposure to cold.

chloramphenicol (klo-ram-fen'ikl). (See **Chloromycetin**.)

chlorination (klo-rin-ay'shun). Addition of chlorine to water or sewage to kill germs.

chloroform (klo'ruh-fawrm). Substance used as an anesthetic, a counterirritant, and an antispasmodic.

Chloromycetin (klo-ro-migh'suh-tin). An antibiotic from a streptomyces fungus. It is active against bacterial and virus diseases, such as typhus, undulant fever, typhoid, and virus pneumonia.

chlorophyll (klo'ruh-fil). The green coloring matter in plants.

cholera (kahl'er-uh). An epidemic disease, often fatal, spread through polluted water. The symptoms are vomiting, diarrhea, great thirst, and cramps.

cholesterol (ko-les'tuh-rohl). A fatlike substance found in all animal fats and oils as well as in the brain and blood. This substance is deposited in the walls of blood vessels in one type of hardening of the arteries, and it is also the principal material in gallstones.

choline (ko'leen). One of the B-complex vitamins believed to be important in building tissue.

chorea (ko-ree'uh). A nervous disease in which there are involuntary jerk-

- ing movements of the body; St. Vitus's dance. (See also Huntington's chorea.)
- chorion** (ko'ree-on). The outer covering of the developing ovum. It protects and nourishes it and later becomes the placenta.
- chromatin** (kro'muh-tin). Substance in the cell nucleus that stains very darkly.
- chromosome** (kroh'muh-sohm). One of the rod-shaped bodies in the nucleus of a dividing cell which carries the hereditary factors (genes). In man there are 48 in each cell (except the spermatozoa and ova).
- chronic** (krahnik). Long continued.
- chyle** (kighl). Milklike fluid formed in the small intestine during digestion of fat.
- chyme** (kighm). Digested food in the stomach.
- cilia** (sil'i-uh). Fine hairs, such as the eyelashes and the hairs in the nose which filter out dust.
- ciliary** (sil'i-et-i) **body**. A structure in the eyeball which is formed of the ciliary muscle and the ciliary processes. The ciliary muscle controls the curvature of the eyeball. The ciliary processes secrete nutrient fluids into the eye.
- cinchona** (sin-ko'nuh). Bark of the cinchona tree from which quinine is prepared.
- circumcision** (ser-km-sizh'un). Removal of the foreskin of the penis.
- cirrhosis** (si-ro'sis). Chronic inflammation of an organ. In the liver the disease is marked by degeneration of the liver cells and thickening of the surrounding tissue.
- claustrophobia** (klaus-troh-fo'bi-uh). Fear of being in a small closed place.
- clavacin** (klav'vuh-sin). Patulin; an antibiotic from fungi, active against many bacteria but too poisonous for medicinal purposes.
- clavicle** (klav'ikl). The collarbone.
- cleft palate** (kleft pal'it). Congenital groove in the roof of the mouth due to failure of the palate bones to unite. Harelip is often present in persons with cleft palate.
- climacteric** (kligh-mak-ter'ik). Menopause.
- clinic** (klin'ik). 1. An institution where patients not needing hospital care are treated. 2. An institution where several doctors working together study and treat patients.
- clitoris** (kli'to-ris). A small body at the front of the vulva. It is the female organ similar to the penis in the male.
- clonus** (klo'nuhs). Spasm; muscles alternately tense and relax.
- clostridium** (klaus-trid'i-um). A type of bacteria. One member of the group causes tetanus (lockjaw), another causes botulism.
- clot** (klot). A coagulate; a soft semisolid jellylike mass formed from a liquid, such as blood or lymph.
- cloves, oil of**. Oily liquid used for temporary relief of toothache; also used as an antiseptic in dental work.
- club foot**. Talipes; a congenitally deformed foot. The bones are twisted, causing the person to walk abnormally.
- coagulation** (ko-ag-yoo-lay'shun). Formation of a semisolid mass from a liquid, such as blood or lymph.
- cocaine** (ko-kayn'). Local anesthetic; narcotic.
- coccidioidomycosis** (kakh-sid-i-oi-doh-migh-ko'sis). Valley fever; fungus disease usually involving the lungs. It is found in the southwestern part of the United States.
- coccus** (kakh'uhs). Spherical shaped bacterium.
- coccyx** (kakh'siks). The bone at the lower end of the spinal column.
- cochlea** (kakh'li-uh). The snail-shaped tube of the ear which contains the organs of hearing.
- codeine** (ko'dee-in). A pain-reliever milder than morphine.
- cod liver oil**. An oil containing vitamin D. It is used in treating rickets.
- coitus** (ko'it-us). Sexual intercourse.
- cold sore**. Fever blister.
- colic** (kahl'ik). Pain and spasm in the abdomen.
- colitis** (ko-light'is). Inflammation of the colon.
- mucous colitis**. A condition usually associated with nervousness and worry, and marked by passage of mucus from the bowel.
- ulcerative colitis**. More serious condition, characterized by ulcers (open sores).
- colon** (ko'lon). Large intestine into which the small intestine empties. It

- ends in the rectum. Final stages of digestive process occur here.
- color blindness.** Inability to identify colors.
- colostomy** (ko-lahs'toh-mi). Formation of an artificial anus.
- colostrum** (ko-lahs'trum). The "first milk" which is formed in the breast.
- coma** (ko'muh). Stupor from which one cannot be aroused.
- communicable** (kuh-myoo'ni-kuh-bl) **disease.** One which can be spread from one person to another either by direct contact or by articles soiled by the sick person.
- complement-fixation** (kahn'pluh-ment fik-say'shun) **test.** A type of diagnostic blood test used to diagnose many different diseases, such as syphilis.
- complex** (kahn'pleks). In psychiatry it refers to a condition in which repressed ideas and desires influence personality.
- compound fracture** (kahn'pound frak'cher). A broken bone which has broken through the skin.
- compress** (kahn'pres). Material such as folded gauze applied as a dressing or used to produce pressure on a wound.
- concussion** (kon-kuhsh'n). Brain injury caused by a violent jar or blow.
- cone** (kohn). One of the parts of the retina that is sensitive to light.
- congenital** (kon-jen'it-l). Existing at birth.
- conjunctiva** (kon-juhngk'ti-vuh). Membrane which covers the front of the eyeball and lines the eyelid.
- conjunctivitis** (kon-juhngk-ti-vigh'tis). Inflammation of the conjunctiva.
- connective tissue** (kon-nek'tiv tish'yoo). Tissue which binds parts of the body together, such as bone, cartilage, fat, and fascia.
- constipation** (kon-sti-pay'shun). Condition in which the bowels move less often than usual and with difficulty.
- consumption** (kon-suhmp'shun). Tuberculosis of the lungs.
- contact lenses.** Corrective lenses which fit over the eyeball under the eyelid.
- contagious** (kon-tay'jus). Able to be spread by personal contact or indirectly by articles used by a sick person.
- contraception** (kahn-truh-sep'shun). Prevention of pregnancy.
- contusion** (kon-too'zhun). Bruise.
- convalescence** (kahn-vuh-les'ns). The period of recovery after an illness.
- convulsion** (kon-vuhl'shun). An involuntary spasm.
- copulation** (kahp-yoo-lay'shun). Sexual intercourse.
- cornea** (kawr'ni-uh). Clear transparent outer layer on the front of the eyeball.
- corns.** Areas of thickened skin on the toes. They are usually caused by the pressure of ill-fitting shoes.
- coronary** (kahr'uh-nehr-i). Relating to the arteries which supply blood to the heart muscle.
- coronary thrombosis** (thrahm-bo'sis). Formation of a blood clot in the coronary artery interfering with the blood supply to the heart muscle.
- coroner** (kahr'uh-ner). Official who examines cases of sudden death to determine the cause.
- corpuscle** (kawr'puhs-l). A small mass; the red and white corpuscles are the cells in the blood.
- corpus luteum** (kawr'puhs loo'ti-um). A yellow body that forms in the ovary after an egg has been released. It secretes the hormone progesterone.
- cortex** (kawr'teks). Outer layer.
- cortisone** (kawr'ti-zohn). Hormone produced by the adrenal cortex; also called compound E. It is used in treating certain diseases, such as arthritis.
- coryza** (ko-righ'zuh). Cold in the head; a condition in which there is a large volume of mucus discharged in the nasal passages.
- counterirritant** (koun-ter-ir'i-tant). Substance applied to the skin to produce an inflammation which will draw congesting substances away from an inflamed organ underneath.
- cowpox.** A virus disease of cattle which can be transmitted to humans. It is believed to be a mild form of smallpox, as immunity to both cowpox and smallpox results from an attack of cowpox or vaccination with the cowpox virus (vaccinia).
- cranial** (kray'ni-al) **nerve.** A nerve that attaches to the brain. The twelve pairs of cranial nerves are as follows:
I olfactory. Transmits the sense of smell.

- II** optic. Transmits the sense of sight.
- III** oculomotor. Moves the muscle of the eyeball in accommodation and controls the opening of the pupil.
- IV** trochlear. Controls movements of the eyeball.
- V** trigeminal. The sensory nerve of the face and the front of the scalp.
- VI** abducens. Controls a muscle of the eyeball.
- VII** facial. Moves muscles of the face, controls the salivary glands, and provides the sense of taste.
- VIII** acoustic. Transmits the sense of hearing and the head position.
- IX** glossopharyngeal. Controls muscles of the pharynx and provides sense of taste in the back part of the tongue.
- X** vagus. Sensory and motor nerve of the heart, esophagus, and stomach.
- XI** accessory. Controls muscles of larynx and pharynx and controls the muscle of the neck concerned with turning the head and raising the shoulder.
- XII** hypoglossal. Moves the tongue.
- cranium** (kray'ni-um). The skull.
- creatinine** (kree-at'in-ighn). A waste product from muscles. It is carried away in the blood and eliminated in the urine.
- creosote** (kree'uh-soht). A strong antiseptic.
- curare** (koo-rah'ree). A substance obtained from poisonous plants, used to block nerve impulses and relax muscles. It is also used to prevent injury during convulsive treatments of mental patients.
- curettage** (kyoo-ret-tahzh'). Scraping out.
- Curie** (koo'ree'), **Pierre** (1859-1906) and **Marie** (1867-1934). French scientists who discovered radium.
- Cushing** (koosh'ing), **Harvey** (1869-1939). An American surgeon who greatly advanced neurosurgery and developed many important techniques of brain surgery.
- Cushing's syndrome** (sin'drohm). A group of symptoms including collec-

tion of fat in the face, abdomen, and buttocks, and caused by a tumor of the pituitary or adrenal gland.

cuspid (kuhs'pid). Tooth with a single point; canine tooth.

cutaneous (kyoo-tayn'i-uhs). Relating to the skin.

cuticle (kyoo'ti-kl). Outer layer of skin; dead skin, such as that at the base and sides of fingernails and toenails.

cyanosis (sigh-uh-no'sis). Condition in which the skin and mucous membranes are bluish from lack of oxygen in the blood.

cyclopropane (sigh-klo-pro'payn). An anesthetic gas especially useful when lung disease is present.

cyst (sist). A sac which contains gas, fluid, or a semisolid substance.

cystine (sis'teen). One of the amino acids.

cystitis (sis-tigh'tis). Inflammation of the bladder.

cystoscopy (sis-tahs'ko-pi). Examination of the interior of the urinary bladder.

cytological (sigh-toh-lahj'ikl) **smear**. A glass slide coated with material from the vagina, sputum, or other body material, in order to examine the material microscopically.

cytoplasm (sigh'toh-plazm). The contents of a cell not including the nucleus.

D

dandruff (dan'druhfl). White scales or flakes of dead skin on the scalp.

Darwin (dahr'win), **Charles Robert** (1809-1882). Originator of the theory of evolution.

deaf-mute (def-myoot). One who can neither hear nor speak.

debility (dib-il'it-i). Weakness.

decalcification (dee-kal-si-fi-kay'shun). Loss of calcium or calcified material in bone or teeth.

decay (dee-kay'). Gradual breakdown; rot.

deciduous (di-sij'oo-uhs) **teeth**. Temporary or baby teeth.

decubitus (di-kyoo'bit-uhs) **ulcer**. Bed sore.

defecation (def-i-kay'shun). Bowel movements.

defloration (def-lo-ray'shun). Destruction of the hymen (the membrane

over the vaginal opening), usually by sexual intercourse.

dehydration (dee-high-dray'shun). Loss or removal of water.

delirium (dee-leer'i-um). Mental disorder marked by excitement and illusions; may be caused by disease or drugs.

delirium tremens (tree'mens). Delirium in which there is fumbling of the hands and insomnia. It is associated with alcohol poisoning, brain disease, or psychosis.

delousing (dee-lou'sing). Process of removing or destroying lice.

deltoid (del'toyd) **muscle**. The large triangular muscle over the shoulder joint.

delusion (di-loo'zhun). A false belief not conforming to the dictates of reason.

dementia (duh-men'shuh). Deterioration of the mind especially with respect to reasoning, will power, and memory.

dementia praecox (pree'kahks). Schizophrenia.

Demerol (dem'er-l). Medicine used as a sedative, pain-reliever, and for relief from spasms.

denatured alcohol. Alcohol to which some substance has been added making it unfit to drink.

dendrites (den'drights). Threadlike parts of a nerve cell that carry impulses to the cell body.

dengue (deng'gay). An infectious disease found in tropical countries; symptoms are fever, severe headache, sore throat, and body pains. The disease, also known as breakbone fever and dandy fever, is caused by a virus carried by a species of mosquito.

dental (den'tl). Pertaining to teeth.

dentifrice (den'ti-fris). A substance for cleaning teeth.

dentin (den'tin). Chief substance in teeth.

denture (den'tyoor). Set of teeth.

deodorant (dee-o'dor-ant). Substance which destroys odors.

depilatory (dee-pil'uh-tor-i). Hair remover.

depressant (dee-pres'ent). A sedative; an agent which slows up a function.

derma (der'muh) or **dermis** (der'mis). The skin.

dermatitis (derm-uh-tigh'tis). Inflammation of the skin.

dermatologist (derm-uh-tahl'uh-jist).

Physician who specializes in the treatment of diseases of the skin, hair, and scalp.

dermatophobia (der-mat-o-foh'bi-uh). Dread of having a skin disease.

dermatophyte (der-mat'o-fight). A mold or fungus that grows on the skin.

desiccation (des-si-kay'shun). Act of drying.

detergent (di-terj'nt). Cleansing agent.

detrition (dee-trish'un). Wearing away by rubbing or grinding.

detritus (dee-trigh'tus). Any broken-down material, such as tissues or tooth substance.

dextrose (deks'trohs). Grape sugar.

diabetes insipidus (digh-uh-bee'teez in-sip'id-us). A chronic disease characterized by the passing of large amounts of urine.

diabetes mellitus (digh-uh-bee'teez mel-light'us). A disease in which sugar is inadequately utilized by the body owing to lack of insulin.

diagnose (digh'ugh-nohs). To recognize a disease.

Diamox (die'a-mox). A diuretic medicine, i.e., one used to increase the flow of urine in dropsy and other edematous conditions.

diaphragm (digh'uh-frag). The septum, or wall, between the chest and the abdomen.

diarrhea (digh-uh-ree'uh). Frequent and loose watery stools.

epidemic diarrhea. An acute contagious disease of new-born infants.

diastole (digh-as'tuh-lee). The interval between heartbeats.

Dick test. Skin test for immunity to scarlet fever; redness indicates susceptibility.

Dicumarol (digh-koo'muh-rawl). A substance isolated from spoiled sweet clover which interferes with blood clotting.

diet (digh'et). The food and drink needed for body nourishment.

digestion (digh-jes'chun). Process of preparing food for absorption.

digit (dij'it). Finger or toe.

digitalis (dij-i-taf'is or dij-i-tay'lis). A substance obtained from the leaves of foxglove and used as a heart stimulant.

Dilantin (digh-lan'tin). A medicine used to prevent epileptic seizures.

dilation (digh-lay'shun). Expansion of an organ, vessel, or the pupil of the eye.

diplegia (digh-plee'ji-uh). Paralysis of like parts on both sides of the body; bilateral paralysis.

Diplococcus (dip-lo-kahk'us). A type of cocci which occurs in pairs; includes the organism that causes pneumonia.

diplopia (dip-lo'pi-uh). Condition of seeing double.

dipsomania (dip-so-mayn'i-uh). Uncontrollable desire for alcoholic drink.

disc, vertebral (ver'ti-brl). The pad of cartilage between the vertebrae.

disinfect (dis-in-fekt'). Destroy disease-producing germs and substances.

dislocation (dis-lo-kay'shun). The separation of the parts of a joint.

disorientation (dis-o-ree-en-tay'shun). Mental confusion as to time, place, or identity of persons; loss of one's bearings.

diuretic (digh-yoo-ret'ik). Substance which increases the output of urine.

divergent strabismus (digh-ver'jnt struh-biz'muhs). Eye condition in which the axes of the eyes diverge; walleye.

dominant trait (dahm'in-ant trayt). Stronger of two competitive hereditary traits.

donor (don'er). Person who gives blood or tissue for use in another person.

dorsal (dor'sl). Pertaining to the back.

dose (dohs). Measured amount of medicine to be taken at one time.

douche (doosh). Washing a body cavity with a stream of water.

Dramamine (dram'uh-meen). An antihistamine used to prevent motion sickness.

dressng. A sterile cloth used to cover a wound.

dropsy (drahp'si). Condition in which fluid collects in the body.

drug. Any medicine.

duct (duhkt). A passage for fluids.

ductless glands. Endocrine glands.

duodenum (doo-uh-dee'nm). The part of the small intestine nearest the stomach.

dura mater (dyoor'uh mah'ter). Outermost layer covering the brain and spinal cord.

dysentery (dis'n-tehr'i). Inflammation of the large intestine resulting in diar-

rhea with passage of blood and mucus.

amebic dysentery. Diarrhea caused by amebae. Spread by means of contaminated food and flies.

bacillary dysentery. Disease marked by diarrhea and caused by bacteria (bacilli). Spread by means of contaminated food, flies, etc.

dysmenorrhea (dis-men-uh-ree'uh). Painful menstruation.

dyspepsia (dis-pep'si-uh). Indigestion.

dysphagia (dis-fay'juh). Difficulty in swallowing.

dyspnea (disp'nee-uh). Difficulty in breathing.

dystrophy (dis'troh-fee). Faulty nutrition.

progressive muscular dystrophy.

Disease in which muscles gradually weaken because of a breakdown in the muscle nerve endings (not in the spinal nerve endings).

dysuria (dis-yoo'ri-uh). Painful or difficult urination.

E

eardrum. Tympanum; the membrane which separates the middle ear from the outer ear.

eclampsia (ek-lamp'si-uh). A convulsive attack during pregnancy caused by toxemia.

ectoderm (ek'toh-derm). Outer layer of the embryo.

ectopic (ek-tahp'ik). Not in the normal place; an ectopic pregnancy is one where the fetus develops outside the uterus.

edema (i-dee'muh). Swelling caused by collection in tissues of fluid which has escaped from the blood capillaries.

efferent (ef'er-ent) **nerves.** Those which carry impulses from the brain or spinal cord to other parts of the body.

ego (ee'goh). Self; especially the conscious mind.

Ehrlich (air'lik), **Paul** (1854-1915). German scientist, pioneer in immunology and in the use of chemicals in treating diseases. After 606 attempts, he obtained an arsenic compound (salvarsan) effective against syphilis.

ejaculation (i-jak-yoo-lay'shun). Expulsion of semen from the penis in sexual intercourse.

- elective treatment.** Treatment helpful to the patient but not immediately necessary to save his life.
- electrocardiogram** (i-lek-troh-kahr'di-uh-gam). Graph of the electric current produced by the heart when contracting.
- electroencephalograph** (i-lek-troh-en-sef'uh-lo-graf). Instrument for recording brain waves.
- electrolysis** (i-lek-trahf'i-sis). Decomposition by means of electricity.
- elephantiasis** (el-i-fan-tigh'uh-sis). Disease caused by the presence of a parasitic worm in the lymphatic system. It results in enlargement of parts of the body, such as a leg.
- elimination** (i-lim-in-ay'shun). Removal of wastes.
- elixir** (i-lik'ser). Sweetened and flavored medicine.
- emaciation** (i-may-shi-ay'shun). General loss of weight and wasting of the body.
- embolism** (em'bulh-lizm). Obstruction of a blood vessel by a blood clot, air bubble, fat globule, or bacteria.
- embolus** (em'bulh-luhst). Any material which blocks a blood vessel.
- embryo** (em'bri-oh). Fetus during its first three months of growth.
- emesis** (em'i-sis). Vomiting.
- emetic** (i-met'ik). Substance which induces vomiting.
- emetine** (em'i-tin). A medicine effective in treating acute amebic dysentery. It is injected under the skin or into a muscle.
- emission** (i-mish'n). Sudden discharge of fluid.
- nocturnal emission.** Discharge of semen during sleep.
- emollient** (i-mahl'yent). A soothing medicine.
- empathy** (em'puh-thi). Feeling as if one were in another's place; deep understanding.
- emphysema** (em-figh-see'muh). Swelling of tissues from gas or air, particularly lung tissue.
- empyema** (em-pigh-ee'muh). Presence of pus in a body cavity, especially the lungs.
- emulsion** (i-muhl'shun). A suspension in liquid (usually water) of very fine particles, such as oil droplets.
- enamel** (an-am'el). The hard shiny surface of teeth.
- encephalitis** (en-sef-uh-ligh'tis). Inflammation of the brain.
- epidemic encephalitis.** Brain fever; a virus disease spread through domestic animals and insects. It causes languor, muscle weakness, and drowsiness.
- encephalegram** (en-sef'uh-lo-gram). X-ray of the brain.
- encephaloma** (en-sef'uh-lo'muh). Brain tumor, which may or may not be cancerous.
- encephalon** (en-sef'uh-lahn). The brain.
- endemic** (en dem'ik). Referring to a disease which occurs fairly constantly in a locality.
- endocarditis** (en-doh-kahr-digh'tis). Inflammation of the heart lining.
- endocrine** (en'doh-krighn) **gland.** One of the ductless glands which secrete directly into the blood stream. The hormones produced by these glands stimulate and control growth, metabolism, and the digestive and reproductive systems. The endocrines include the thyroid, parathyroid, adrenal, pituitary, and thymus glands, and the ovaries and testicles.
- endoderm** (en'doh-derm). Innermost layer of an embryo.
- endogenous** (en-dah'jen-us). Originating within an organism.
- endometrium** (en-doh-mee'tri-un). Mucous membrane lining the uterus.
- endothelium** (en-doh-thee-li-un). Membrane which lines blood vessels and body cavities.
- enema** (en'eh-muh). Liquid injected into the rectum, usually to aid bowel movement.
- enervation** (en-er-vay'shun). Lack of nervous energy.
- enteric** (en-ter'ik). Pertaining to the intestine.
- enteritis** (en-ter-igh'tis). Inflammation of the intestine.
- enuresis** (en-yoor-ees'is). Inability to control urination, especially at night; bed-wetting.
- environment** (en-vigh'rn-ment). Surroundings.
- enzyme** (en'zighm). A complex substance which causes other substances to split into simpler compounds; a catalyst.
- eosinophil** (ee-o-sin'o-fil). A type of leukocyte which contains granules that take up eosin dye if stained.
- ephedrine** (eh-fed'rin). Substance used to

- dilate the pupil of the eye. It is also useful in treating asthma and hay fever.
- epidemic** (ep-i-dem'ik). A disease which affects a large number of people in a locality.
- epidemiology** (ep-i-dee-mee-ahl'o-ji). Study of epidemic diseases.
- epidermis** (ep-i-der'mis). Outer layer of the skin.
- epididymis** (ep-i-did'i-mis). Small mass at the back of the testicle. It consists of a many-folded tube which opens into the vas deferens.
- epiglottis** (ep-i-glah'tis). The flap over the larynx which closes during swallowing to prevent food from entering the windpipe.
- epilepsy** (ep'i-lep'si). Nervous disease in which there are convulsive seizures.
- epinephrine** (ep-i-nef'rin). The hormone secreted by the adrenal gland; adrenalin.
- epiphysis** (eh-pif'is-is). The end part of a long bone. It is separate from the shaft of the bone in young children but later unites with it.
- episiotomy** (i-piz-ee-ah't'o-mi). Cutting of the vaginal lips during delivery of a baby to prevent the tissues of the mother from being torn.
- epithelium** (ep-i-thee'li-um). Type of body cells found in skin and mucous membranes.
- Epsom salt**. Magnesium sulfate; a laxative.
- erection** (ee-rek'shun). State of hardness in the penis or other erectile tissues when filled with blood.
- erepsin** (ee-rep'sin). An enzyme in intestinal juice that aids in breaking down protein into amino acids.
- ergot** (er'gaht). Substance obtained from a grain fungus.
- erotic** (i-raht'ik). Relating to the sex urge.
- eructation** (ee-ruhk-tay'shun). Belching.
- eruption** (i-rup'shun). Breaking out, as for example a rash.
- erysipelas** (ehr-i-sip'uh-luhs). St. Anthony's fire; a severe infectious disease in which the skin becomes swollen and inflamed. The disease is caused by a streptococcus organism which is susceptible to antibiotics.
- erythema** (chr-i-thee'muh). Redness of the skin.
- erythroblastosis fetalis** (e-rith-roh-blas-toh'sis fee-tal'is). An anemia in newborn babies associated with the Rh factor. The anti-Rh factor in Rh-negative blood of the mother mingles with the baby's Rh-positive blood and interferes with the development of red blood cells. Treatment is replacement of the unhealthy blood by transfusion with normal blood.
- erythrocyte** (i-rith'ruh-sight). Red blood cell.
- erythromania** (i-rith-ruh-may'ni-uh). Uncontrollable blushing.
- erythromycin** (ehr-ee-throh-my'sin). An antibiotic which is unusually effective against staphylococcus germs.
- esophagus** (i-sahf'uh-guhs). Gullet; the tube which carries food from the mouth to the stomach.
- estrin** (es'trin). Estrogen; female sex hormone produced by the ovaries.
- estrogen** (es'truh-jen). A substance, either natural or synthetic, which produces the changes connected with menstruation and pregnancy.
- estrone** (es'troh'n). One of the female hormones.
- ether** (ee'ther). Ethyl ether; an anesthetic.
- etherize** (ee'ther-ighz). Anesthetize by inhalation of ether.
- ethmoid bone**. The bone which forms the roof of the nose. It contains the nasal sinuses.
- ethylene** (eth'il-een). A gas sometimes used to produce anesthesia.
- etiology** (ee-ti-ahl'uh-ji). Causes of disease or the study of the causes of disease.
- eugenics** (yoo-jen'iks). Science of improving the human race.
- eunuch** (yoo'nuhk). Man or boy whose testicles have been removed.
- euphoria** (yoo-faw'ri-uh). Sense of well-being.
- eustachian tube**. The tube connecting the middle ear and the pharynx.
- euthanasia** (yoo-thn-aysh'yuh). Painless death.
- evacuation** (i-vak-yoo-ay'shun). Emptying.
- exacerbation** (eg-zas-er-bay'shun). Increase in the severity of a disease.
- excision** (ek-sizh'un). The act of cutting out.

excoriation (eks-kaw-ri-ay'shun). Removal of skin by scraping or scratching.

excrecence (eks-kres'ens). An outgrowth from the surface of an organ.

excrete (eks-kreet'). Give off waste products.

exfoliation (eks-foh-li-ay'shun). Flaking off of dead tissue.

exhalation (eks-huh-lay'shun). Breathing out.

exhibitionism (ek-si-bish'un-izm). Abnormal tendency to expose one's body to view, particularly the genitals.

exocardia (ek-so-kahr'di-uh). A congenital displacement of the heart.

exophthalmos (ek-sahf-thal'mus). Protruding eyeballs.

exophthalmic goiter. Disease of the thyroid gland which causes the eyes to protrude. Loss of weight, rapid heartbeat, and enlarged thyroid are also associated with it.

exotoxin (ek-so-tahk'sin). A poison excreted by germs during their growth.

expectorant (ek-spek'tuh-rant). Substance that increases the output of sputum.

expectoration (eks-pek-tuh-ray'shun). The act of spitting.

expiration (eks-pi-ray'shun). Exhalation.

exploratory (eks-plawr'uh-taw-ri). Pertaining to a careful examination, as in diagnosis.

extensor (ek-sten'ser). A muscle used to straighten a bent limb.

extremities (eks-trem'i-teez). The limbs.

lower extremities. The legs and feet.

upper extremities. The arms and hands.

exudate (eg'soo-dayt). Fluid given off into the tissues.

F

Fahrenheit (fahr'en-hight). The temperature scale in which the boiling point of water is 212, the freezing point 32, and normal body temperature 98.6 (in mouth).

faint (faynt). Loss of consciousness because of insufficient blood in the brain.

fallopian (fuh-loh'pi-un) **tubes**. Ovi-

ducts; the two tubes on each side of the uterus which connect the ovaries and the uterus. An egg cell released by the ovary must pass through the fallopian tube, and it is believed that a woman is most fertile during the period the ovum is in the tube.

farsightedness. Hyperopia; the eye is too flat, causing light rays to focus behind the retina.

fascia (fash'yuh). Thin tissues found beneath the skin between and around muscles and other structures.

fauces (faw'seez). Passage between the throat and pharynx.

favus (fay'vus). A contagious skin disease caused by a fungus and marked by cup-shaped yellow crusts on the hair follicles, particularly of the scalp.

FDA. Abbreviation for Food and Drug Administration.

febrile (feb'ril). Feverish.

feces (fee'seez). The discharge from the bowels.

fecundity (fi-kuhn'di-ti). Fertility.

feeble-mindedness. Lack of intelligence caused by an underdeveloped mind. The individual may attain a mental age between 8 and 12 years.

femoral (fem'uh-rl). Pertaining to the thigh.

femur (fee'mer). The thigh bone.

fenestrated (fen'es-tray-ted). Pierced.

fertile (fer'tl). Able to produce offspring.

fertilization (fer-til-igh-zay'shun). Union of the egg cell with the sperm cell.

fester (fes'ter). To form pus.

fetal (fee'tl). Pertaining to the developing unborn baby.

fetus (fee'tuhs). The unborn baby after the third month of pregnancy.

fever (fee'ver). An abnormally high body temperature, above 98.6 F.

fever blister. Sore on the lips, sometimes appears when the patient has fever; cold sore; herpes labialis.

fibril (figh'bril). Threadlike structure, one of many that make up muscle tissue.

fibrillation (fib-ril-lay'shun). Tremor or twitching of muscle fibers.

auricular fibrillation. Condition in which the wall of the heart auricle twitches instead of contracting normally.

ventricular fibrillation. Twitching of the wall of the ventricle of the

- heart instead of normal contraction.
- fibrin** (figh'brin). Protein in the blood which forms into fibers when the blood clots.
- fibula** (fib'yoo-luh). The smaller of the two bones of the lower leg.
- filariasis** (fil-uh-righ'uh-sis). Chronic disease caused by the presence of parasitic worms which obstruct blood and lymph vessels. It may result in elephantiasis.
- filter** (fil'ter). To separate solid particles from a liquid by passing it through a porous substance.
- Finlay de Barres, Carlos Juan** (1833-1915). Cuban physician who introduced the theory that yellow fever was spread by mosquitoes.
- first aid**. Immediate and temporary treatment given the sick or injured before the doctor arrives.
- fission** (fish'n). Splitting.
- fissure** (fish'er). A slit or crack.
- fistula** (fis'choo-luh). A tubelike ulcer connecting the skin to a hollow organ or abscess, or connecting two hollow organs or abscesses.
- anal fistula**. Fistula near the anus.
- gastric fistula**. An opening into the stomach through the abdominal wall.
- biliary fistula**. Fistula leading into the gallbladder or bile duct.
- flaccid** (flak'sid). Flabby.
- flat foot**. Foot with a sunken arch.
- flatulence** (flah'choo-lens). A large amount of gas in the stomach or intestines.
- Fleming** (flem'ing), **Sir Alexander** (b. 1881). English scientist who discovered the antibiotic action of penicillin. He was awarded the Nobel prize (1945) together with Dr. Ernest Boris Chain and Sir Howard Walter Florey, who also worked on penicillin.
- flexor** (flek'ser). A muscle that causes bending of a joint.
- fluke** (flook). A type of parasitic worm which may infect man or other animals.
- fluorine** (floo'oh-rin). An element related to chlorine. In small amounts in water it helps prevent tooth decay.
- fluoroscope** (floo'uh-ruh-skohp). A device for projecting the x-ray image on a screen instead of on film. Used especially for observing the heart, lungs, or digestive organs.
- folic acid** (foh'lik as'id). One of the vitamin B₂ complex, used in treating certain types of pernicious anemia.
- follicle** (fahl'ikl). A small duct or sac.
- hair follicle**. Small depression in the skin containing the hair root.
- intestinal follicle**. One of the small tubular glands in the mucous membrane of the small intestine.
- graafian follicle**. One of the many small sacs in the ovary, each of which contains an egg cell.
- fomentation** (foh-men-tay'shun). A warm application to reduce pain and inflammation; a poultice.
- fontanel** (fon-tuh-nel'). One of the "soft spots" on a baby's head where the skull bones have not yet joined.
- foramen** (foh-ray'men). An opening, especially one in a bone or other body structure where nerves or blood vessels pass through.
- foramen ovale**. Opening in the wall between the auricles in the heart of the fetus.
- magnum foramen**. Opening in the skull through which the spinal cord passes from the brain.
- forceps** (fawr'seps). A tonglike or tweezerlike instrument used for grasping or pinching. There are many different types and sizes, depending upon the use for which the instrument was designed.
- obstetrical forceps**. Large tonglike instrument which fits around a baby's head and requires only gentle motion to assist birth.
- forearm** (for'arm). The part of the arm between wrist and elbow.
- forebrain** (for'brayn). The front part of the brain of an embryo.
- foreskin**. Prepuce; the fold of skin covering the head of the penis.
- formaldehyde** (fawr-mal'di-highd). A pungent gas which is used as a disinfectant. In solution it is used to harden laboratory specimens and preserve them.
- fossa** (fahs'uh). A pit or depression.
- fovea** (foh'vi-uh). A cup-shaped depression.
- fovea centralis**. The pit in the center of the retina, which is at the point of clearest vision.

Fracastoro (frak-as-tor'o), **Girolamo** (1483-1553). Italian pathologist who gave syphilis its name and made many contributions to the knowledge of infectious diseases.

Franklin, Benjamin (1706-1790). American patriot and founder of the Pennsylvania Hospital. Among his contributions to medical science were the invention of bifocal lenses and the invention of a flexible catheter.

freckle. Pigmented spot on the skin. The tendency to have freckles may be hereditary, but the number is increased with exposure to the sun.

Freud (froyd), **Sigmund** (1856-1939). Austrian psychiatrist who emphasized the importance of the unconscious mind, particularly childhood impressions, as the cause of nervous disorder.

Friedman (freed'man) **test**. A pregnancy test in which urine from the woman is injected into an unmated female rabbit. If the woman is pregnant the rabbit's ovaries will show changes caused by the hormones in the urine. False results are rare.

frigidity (fri-jid'it-i). Inability to derive pleasure from sexual intercourse.

frog test. Test for pregnancy in which urine from the woman is injected into a female frog. If the woman is pregnant the hormones in the urine will cause the frog to lay eggs.

frontal (fruhn'tal). Relating to the forehead.

frostbite. Inflammation caused by the freezing of a part.

Fuadin (fyoo'uh-din). A brand of stibophen, which is an antimony compound.

fulminating (fuhl'min-ay-ting). Occurring suddenly and with great severity, as a pain or disease.

fumigation (fyoo-mi-gay'shun). Disinfection with vapors or gas.

fundus (fuhn'dus). The part of an organ farthest from its opening; the base.

fungicide (fuhn'ji-sighd). Substance that destroys fungi.

fungus (fuhng'guhs). The fungus group includes mushrooms, molds, mildews, yeasts, and moldlike microorganisms. Some fungi cause disease.

funicle (fyoo'rung-kl). A coil.

fusiform (fyoo'si-form). Spindle-shaped.

G

galactocoele (guh-lak'toh-seel). A milk-filled tumor in a duct of the mammary gland.

Galen (gay'len) (A.D. 131-201). Greek physician whose writings on medicine formed the basis of medical teaching until the sixteenth century.

gall (gawl). Bile.

gallbladder. Saclike organ located below the liver. It serves as a storehouse for bile.

gallstone. Stonelike mass which has formed in the gallbladder.

gamma globulin (gam'uh glahb'yoo-lin). The portion of blood plasma protein which contains antibodies. Inoculation with gamma globulin seems to offer short-term protection against poliomyelitis.

ganglion (gang'gli-un) pl. **ganglia**. 1. Mass of nervous tissue, a nerve center. 2. A cyst in a tendon sheath.

gangrene (gang'green). Localized death and decay of tissues usually caused by the blood supply being cut off to one part of the body.

gastroctomy (gas-trek'toh-mi). Cutting out of part or all of the stomach.

gastric (gas'trik). Pertaining to the stomach.

gastric juice. Digestive juice secreted by the stomach. It contains the enzymes *rennin* and *pepsin* and is acid in nature because of the presence of hydrochloric acid.

gastric ulcer. See *peptic ulcer*.

gastritis (gas-trigh'tis). Inflammation of the stomach.

gastrocele (gas'troh-seel). Hernia of the stomach.

gastrocnemius (gas-trahk-nee'mi-us). The large muscle of the calf of the leg. It aids in bending the knee and extending the foot forward in walking.

gastroenteritis (gas-troh-en-ter-igh'tis). Inflammation of the stomach and intestines.

gastroenterologist (gas-troh-en-ter-ahl'o-jist). Physician who specializes in diseases of the stomach and intestines.

gastrojejunostomy (gas-troh-jeh-joo-nahs'toh-mi). Surgical formation of an opening between the stomach and the jejunum (part of the small intestine).

- gastrostomy** (gas-trahs'toh-mi). Creation of an artificial fistula in the stomach.
- gastrula** (gas'troo-lah). Early stage of an embryo.
- gene** (jeen). Basic unit which determines hereditary characteristics. It is part of the chromosome.
- genetic** (juh-net'ik). Pertaining to reproduction or the origin of a biological unit.
- genetics**. The study of heredity and transmission of characteristics.
- genitals** (jen'i-tals) or **genitalia** (jen-i-tay'li-uh). The reproductive organs.
- genitourinary** (jen-i-toh-yoo'ri-nair-i). Pertaining to both the reproductive and urinary systems.
- geriatrics** (jehr-ee-at'triks). The branch of medicine which deals with the diseases of old people.
- germ** (jerm). Microorganism, such as a bacterium, especially one which is capable of causing disease.
- German measles**. Acute contagious disease caused by a virus. It produces a red rash which lasts a couple of days.
- germicide** (jerm'uh-sighd). Substance that kills germs.
- gerontology** (jehr-un-tahl'un-ji). Study of old age and its diseases.
- gestation** (jes-tay'shun). Pregnancy.
- giantism** (jigh'un-tizm) or **gigantism** (jigh'gan-tizm). Growth of the body or a part to an unusually large size, caused by overproduction of hormones in the pituitary.
- gingivitis** (jin-ji-vigh'tis). Inflammation of the gums.
- gland**. An organ that secretes a substance used by some other part of the body.
- glanders** (glan'ders). A disease generally of horses but communicable to man. It is characterized by fever, nodules, and a nasal discharge containing pus.
- glandular** (glan'dyoo-ler) **fever**. Infectious mononucleosis.
- glans penis** (glanz pee'nis). Head of the penis.
- Glauber's** (glaw'berz) **salt**. Sodium sulfate; a purge.
- glaucoma** (glaw-koh'muh). A disease of the eye in which there is increased pressure within the eye damaging the retina and the optic nerve. It may lead to blindness.
- globulin** (glahb'yoo-lin). A protein which is found in blood serum and in the placenta and helps to combat infection.
- glomerulus** (glo-mair'yoo-lus). One of the small masses of blood capillaries in the kidney which filter out waste products.
- glottis** (glah'tis). Opening between the vocal cords.
- glucose** (gloo'kohs). Dextrose; a simple sugar which is produced in the body from digestion of starchy substances and is one of the body's main sources of energy. Glucose is contained in the solution used in intravenous feeding of patients to provide nourishment.
- glucose tolerance test**. Test for diabetes.
- gluteal** (gloo'ti-al). Pertaining to the buttocks.
- gluteus maximus** and **gluteus minimus** **muscles**. The muscles that form the buttocks.
- glycemia** (gligh-see'mi-uh). Presence of sugar in the blood.
- glycerin** (glis'er-in). A syrupy substance used as a soothing skin lotion, and as an ingredient in suppository laxatives.
- glycine** (gligh'sin). One of the amino acids.
- glycogen** (gligh'ko-jen). Starchy substance which the body makes from carbohydrates and stores in the liver. When needed as a source of energy it is converted into glucose and released into the blood.
- glycopenia** (gligh-ko-pee'ni-uh). Unusually low amount of sugar in the blood.
- glycoprotein** (gligh-ko-pro'ti-in). Compound of a protein and a carbohydrate.
- glycosuria** (gligh-ko-shoo'ri-uh). Abnormal increase in the amount of sugar in urine.
- gnathoplasty** (nay'thoh-plas-ti). Plastic surgery of the lower part of the face.
- goblet cell**. A secreting cell in the mucous membrane lining the intestine.
- goiter** (goy'ter). Enlargement of the thyroid gland, which appears as a swelling on the front of the neck.
- gonad** (gol'nad). A sex gland, either the ovary of the female or the testis of the male.
- gonococci** (gahn-o-kakh'sigh). The round bacteria which cause gonorrhea.
- Gorgas** (gawr'guhs), **William C.** (1854-1920). Surgeon General of the army who directed the eradication of the mosquito of yellow fever in Panama.

graafian (graff'i-en) **follicle**. See follicle.

graft. Transplantation of skin or tissue

from one part of the body to another.

gram-negative or **gram-positive**. Referring to the reaction of bacteria to the Gram stain. Those that can be decolorized with alcohol after being stained are gram-negative, such as gonococci, *B. coli*, and typhoid bacilli. Those that cannot be decolorized are gram-positive, such as streptococci, staphylococci, and pneumococci.

gram'cidin (gram-i-sigh'din). An antibiotic from soil bacteria, one of the two substances which make up tyrothricin.

grand mal (grahn mahl). An epileptic attack in which the patient loses consciousness.

granulation (gran-yoo-lay'shun). The formation of flesh on the surface of a wound.

granuloma (gran-yoo-lo'muh). A tumor composed of granulation tissue.

granuloma inguinale (in'gwich-nl). A chronic infection marked by ulcers on the moist surfaces of the external genital region and caused by bacteria.

gray matter. The inner portion of the brain and spinal cord. It is gray in color and is composed of nerve-cell bodies and nerve fibers.

grippe (grip). Influenza.

groin (groyn). The region where the thigh and the trunk join.

gullet. The esophagus and pharynx.

gumma (gum'uh). Small tumor of late syphilis, usually in the brain, liver, or heart. It consists of a fibrous capsule filled with a rubberlike substance.

gustatory (guhs'tuh-taw'ri). Relating to the sense of taste.

gynecology (jin-uh-kahl'uh-jil). The branch of medicine that deals with diseases of women.

gynecomastia (jin'eh-ko-mas'ti-uh). Unusual development of the breasts in the male.

H

Hahnemann (hah'ni-man). **Christian Friedrich Samuel** (1755-1843). German who founded the homeopathic system of treatment.

halibut-liver oil. An oil containing vitamins A and D and requiring a smaller dosage than cod-liver oil.

halitosis (hal-i-toh'sis). Offensive breath.

hallucination (huh-loo'si-nay'shun). Imaginary experience thought to be real.

hallux (hal'uks). The great toe.

Halsted (hal'sted), **William Stewart** (1852-1922). Baltimore surgeon who made many contributions to surgical technique, including the use of sterile rubber gloves during operations.

hammer. One of the three small bones of the inner ear; malleus.

hamstring. Either of the groups of tendons at the back of the knee.

hand, claw. Paralysis of the hand in a clawlike position.

hand, dead. Condition in which the hand becomes blue and painful, caused by use of vibratory tools.

hangnail. Inflammation around a partly detached piece of skin at the side of the nail.

Hansen's (han'senz) **disease**. Leprosy; named after the Norwegian physician who discovered the bacillus which causes leprosy.

harelip. Congenital cleft in the upper lip due to a failure of the bones to unite.

Harvey, William (1578-1657). English physician who investigated heart action and was the first to describe the circulation of the blood.

hashish or **hasheesh** (hash-eesh'). Marijuana; a narcotic with no medicinal value.

health (helth). Normal condition of the body and mind.

healthy. In a normal condition; free from disease.

healthful. Aiding health.

hearing aid. An instrument to amplify sounds for the hard of hearing. There are two types of electric hearing aids: the air-conduction type, which is worn in the ear canal; and the bone-conduction type, which is worn in back of the ear over the mastoid bone.

heart. Muscular organ that pumps blood. It consists of two symmetrical halves each containing two chambers separated by a valve. The upper chambers, called auricles or atria (sing. atrium), receive blood from the veins and pump it into the lower chambers, called ventricles, which then pump it into the arteries.

heart block. Condition in which the auricles and ventricles contract independently, resulting in a beat of varying intensity. It is caused by some

- abnormality in the tissue connecting auricles and ventricles.
- heart burn.** Burning sensation in the esophagus or below the breastbone.
- heart failure.** Weakening of the heart so that it cannot pump blood sufficient for normal circulation.
- heart murmur.** Any sound heard in the heart region in addition to the regular beat.
- heat prostration or exhaustion.** Collapse caused by overexposure to heat; characterized by moist, cold skin, weak pulse, restlessness, and anxiety.
- hemacytometer** (heem-uh-sigh-tah'mi-ter) or **hematocytometer** (heem-uh-toh-sigh-tah'mi-ter). Device used in counting blood cells.
- hemagglutination** (heem-uh-gloo-ti-nay'-shun). Clumping of blood cells.
- hemangioma** (hee-man-ji-oh'muh). Tumor composed of blood vessels.
- hematoma** (heem-uh-toh'muh). A swelling or tumor filled with blood. It may result from hemorrhage under the skin, as in a "black" eye.
- hematuria** (heem-uh-tyoo'ri-uh). Presence of blood in the urine.
- hemiplegia** (hem-i-plee'ji-uh). Paralysis of one side of the body.
- hemoglobin** (hee-moh-gloh'bin). The coloring matter in red blood cells. It is a compound of protein and iron which carries and releases oxygen. Normally 100 cubic centimeters of blood contain 13 to 16 grams of hemoglobin.
- hemolysis** (hee-mahl'is-is). The breaking down of red blood cells.
- hemophilia** (hee-moh-feel'ee-uh). A hereditary condition in which the blood cannot coagulate, resulting in severe bleeding from any wound. The condition affects only males but is passed from mother to son.
- hemoptysis** (hee-mahp'tis-is). Spitting up blood.
- hemorrhage** (hem'or-ij). Abnormal bleeding.
- hemorrhoid** (hem'o-royd). Pile; enlargement of the veins of the anal region, causing pain, bleeding, and constipation.
- hemostat** (hee'mo-stat). Instrument which pinches a blood vessel to prevent bleeding.
- Henle's** (hen'leez) **loop.** Part of the small tubules in the kidney where fluid is reabsorbed from the urine.
- heparin** (hep'uh-rin). Substance found in the liver and other tissues which prevents the clotting of blood. It is sometimes given following an operation in order to prevent blood clots from forming within blood vessels.
- hepatic** (hip-at'ik). Pertaining to the liver.
- hepatitis** (hep-uh-tigh'tus). Inflammation of the liver.
- infectious hepatitis.** A virus disease of the liver producing jaundice, nausea, and vomiting.
- hereditary** (hi-red'i-tair-i). Inherited; passed from parents to offspring.
- heredity** (hi-red'i-ti). The characteristics transmitted from parent to offspring and determined by the genes and chromosomes of the cells.
- hermaphrodite** (her-maf'ro-dight). Person having characteristics of both sexes.
- hernia** (her'ni-uh). Rupture; abnormal condition in which part of an organ pushes through the wall around it. Usually refers to a rupture of the abdominal wall by the intestine but is also used to describe similar ruptures by other organs.
- heroin** (hehr'o-in). A narcotic banned by Federal law because of the danger of addiction.
- herpes** (her'pee-z). Blisterlike skin eruption.
- herpes simplex** (sim'pleks). Blisterlike sores on the edge of the lips, the nostrils, or the genitals; caused by a virus.
- herpes zoster** (zahs'ter). Shingles; groups of small blisters following the path of a nerve, usually on one side of the body, accompanied by a burning or tingling sensation and neuralgic pains; caused by a virus.
- hesperidin** (hes-pehr'i-din). Vitamin P.
- hetrazan** (het'ruh-zan). A substance believed helpful for treating filariasis.
- hiccup or hiccough** (hik'up). Involuntary spasm of the glottis and diaphragm.
- hilum** (high'lum). The depression in a gland at the point where nerves or vessels enter.
- Hippocrates** (hi-pahk'ruh-teez), (460-370 B.C.). Famous Greek physician, often called the "Father of Medicine." 1-

- taught high ethical standards and the importance of clinical experience.
- histamine** (his'tuh-meen). A substance produced in the body from the breakdown of histidine. It dilates blood vessels and stimulates secretions. It is produced in excess in allergy and is believed to be the cause of most of the allergic reactions.
- histidine** (his'tid-in). One of the essential amino acids.
- histology** (his-tahl'uh-ji). Study of microscopic structure of tissues.
- histoplasmosis** (his-toh-plaz-mo'sis). A fatal disease caused by a yeastlike organism.
- hives**. Urticaria; itchy swellings which suddenly appear on the skin. They are caused by an allergic reaction.
- Hodgkin's** (tahj'kinz) **disease**. A fatal disease of the lymph nodes. The cause is not known. It is named after Thomas Hodgkin (1798-1866), who described malignant disease of lymph nodes and also aortic insufficiency.
- Holmes** (holmz), **Oliver Wendell** (1809-1894). Professor at Harvard Medical School who coined the word "anesthesia" and was largely responsible for reducing puerperal fever among American mothers.
- homeopathy** (ho-mi-ahp'uh-thi). System of treatment founded by Hahnemann in which drugs able to produce certain symptoms in healthy persons are used in minute quantities to treat the same symptoms in diseased persons.
- homosexuality** (ho-mo-seks-yoo-al'i-ti). Sexual desire for a person of the same sex.
- hookworm**. A worm which lives as a parasite in the intestines and causes hookworm disease (ancylostoma or uncinari). It enters through the feet or in drinking water. The disease is characterized by anemia, emaciation, and listlessness.
- hormone** (hor'mohn). A glandular secretion carried by the blood stream to the organs which it regulates.
- housemaid's knee**. Bursitis in the joint behind the kneecap; caused by the pressure from kneeling a great deal.
- humerus** (hyoo'mer-us). The bone of the upper arm.
- Hunter, John** (1728-1793). Scottish surgeon who contributed greatly to knowledge of pathology and gave a classic description of inflammation.
- Huntington's chorea** (hunt'ing-tunz koh-ree'uh). A hereditary mental affliction characterized by irregular movements, disturbance in speech, and progressive muscular weakness.
- hyalin** (high'uh-lin). A glassy substance which occurs normally in cartilage, the inside of the eyeball, and other structures.
- hydrocele** (high'droh-seeh). An abnormal collection of fluid, usually in the covering of the testicle.
- hydrocephaly** (high-dro-sef'uh-li). A condition usually congenital in which the head and forehead are enlarged because of an abnormal increase in the cerebral fluid.
- hydrochloric** (high-dro-klor'ik) **acid**. An acid composed of hydrogen and chlorine. It is normally secreted in the stomach to aid digestion.
- hydrogen peroxide** (high'dro-jen per-ahk'sighd). A disinfectant.
- hydrolysis** (high-drah'is-is). Decomposition due to water.
- hydrophobia** (high-dro-foh'bi-uh). See rabies.
- hydrotherapy** (high-dro-thehr'uh-pi). Treatment of disease with water by means of wet packs or baths.
- hygiene** (high'jeen). The science dealing with the maintenance of health.
- hymen** (high'men). Membrane partially covering the vaginal opening.
- hyoid** (high'oyd) **bone**. The U-shaped bone which supports the tongue.
- hyperacidity** (high-per-uh-sid'it-i). Excessive acidity.
- hyperchlorhydria** (high-per-klor-high'dri-uh). Excess of hydrochloric acid in gastric juice.
- hyperemia** (high-per-ee'm'i-uh). An excess of blood in any part of the body; plethora.
- hyperesthesia** (high-per-es-thee'zhi-uh). Unusual sensitivity to touch, pain, or other sensations.
- hyperinsulinism** (high-per-in'soo-lin-izm). Condition of excessive insulin secretion in the body, resulting in a low level of sugar in the blood.
- hyperopia** (high-per-o'pi-uh). Farsightedness: a condition in which only distant objects are seen clearly because the eye cannot accommodate properly. The eyeball is too flat, caus-

ing images to be focused behind the retina.

hyperplasia (high-per-play'zhi-uh). Condition of increased size of an organ because of an increase in the number of cells composing it.

hypertension (high-per-ten'shun). High blood pressure.

hyperthyroidism (high-per-thigh'royd-izm). Overactivity of the thyroid.

hypertrophy (high-per'truh-fi). Abnormal enlargement of a part due to its excessive activity.

hypnosis (hip-no'sis). An artificially induced trance-like sleep in which the person is extremely susceptible to suggestion.

hypnotic (hip-naht'ik). 1. A substance which induces sleep. 2. Pertaining to hypnosis.

hypocidity (high-po-as-id'i-ti). Decreased acid content of the stomach juices.

hypocalcemia (high-po-kal-see'mi-uh). Abnormally small amount of calcium in the blood.

hypochondriac (high-puh-kahn'dri-ak). A person abnormally worried about his health.

hypodermic (high-puh-derm'ik). Injected under the skin.

hypoglossal (high-puh-glafs'ul). Situated under the tongue.

hypoglycemia (high-po-glich-see'mi-uh). Deficiency of sugar in the blood.

hypoinsulinism (high-po-in'soo-lin-izm). Insufficient insulin secretion by the pancreas; diabetes mellitus.

hypophysis (high-pahf'is-is). The pituitary gland.

hypoplasia (high-po-play'zhi-uh). Defective or incomplete development of a tissue or organ.

hypotension (high-poh-ten'shun). Low blood pressure.

hypothalamus (high-po-thal'uh-mus). The part of the brain which plays a part in controlling internal organs and in maintaining uniform body temperature.

hypothyroidism (high-po-thigh'royd-izm). Abnormal condition caused by a decrease in the activity of the thyroid.

hysterectomy (his-ter-ek'tuh-mi). Surgical removal of the uterus; uterectomy.

hysteria (his-tier'i-uh). A psychoneuro-

sis in which there is a loss of control over the will resulting in any of a variety of symptoms such as causeless laughing or crying, emotional excitement, or even convulsions or paralysis.

I

icterus (ik'ter-us). Jaundice.

ictus (ik'tus). 1. A sudden attack. 2. Heartbeat.

id. In psychiatry it refers to the unconscious part of one's self; the part that has to do with instincts, such as those of sex and self-preservation.

idiocy (id'i-o-si). Extreme mental deficiency, usually congenital. The individual is absolutely helpless and has a mental age of less than three years.

idiomuscular (id-i-o-mus'kyoo-lar) **contraction**. Motion of muscle not caused by nerve stimulus; seen in degenerate or fatigued muscle.

idiopathic (id-i-o-path'ik). Of unknown origin.

ileocolostomy (il-i-o-ko-lahs'tuh-mi). An operation connecting the ileum with the large intestine.

ileum (il'i-um). The lower portion of the small intestine between the jejunum and the large intestine.

ilium (il'i-um). Wide upper part of the hip bone.

imbecility (im-bi-sil'i-ti). A condition of mental deficiency in which the individual has a mental age between 3 and 7.

immobilization (im-o-bil-uh-zay'shun). Making a part immovable to aid healing.

immune (i-myoon') **reaction**. Reaction showing that a person is immune to a disease. Sometimes it refers to a reaction to revaccination against smallpox.

immunity (i-myoo'ni-ti). Condition of being resistant to a disease.

active immunity. Immunity acquired as a result of having had the disease or as a result of an inoculation against it.

passive immunity. Immunity acquired by injection of serum from an animal which has active immunity to the disease.

impacted (im-pak'ted). Wedged in so tightly as to be immovable.

- impacted tooth.** One placed in such a way in the gum that it cannot break through.
- imperforate** (im-per'fuh-rayt). Without the normal opening.
- impetigo** (im-pee-tigh'go). A contagious skin disease characterized by blister-like pustules; probably caused by staphylococci or streptococci. It is spread by direct contact with the moist discharges of the sores.
- implantation** (im-plan-tay'shun). Embedding of the embryo into the wall of the uterus. This takes place about ten days after the egg is fertilized.
- impotence** (im'puh-tns). Inability of a male to perform the sexual act.
- impregnation** (im-preg-nay'shun). Fertilization of the ovum by a sperm.
- inactivation** (in-ak-ti-vay'shun). Process of destroying the activity of a substance.
- incipient** (in-sip'i-ent). Just beginning.
- incised** (in-sigh'zd) **wound.** A wound made by cutting.
- incisor** (in-sigh'zer). One of the sharp cutting teeth. There are eight, four in each jaw.
- incompetence** (in-kahm'pi-tens). Inadequacy; being unable to perform the normal function.
- incontinence** (in-kahn'ti-nens). 1. Inability to control urination or bowel movements. 2. Lack of self restraint sexually.
- incoordination** (in-ko-or-di-nay'shun). Inability to use muscles harmoniously in performing a voluntary action.
- incrustation** (in-krus-tay'shun). Formation of a scab or hard coating.
- incubator** (in'kyoo-bay-ter). A container in which the temperature and atmosphere are controlled; used for premature babies.
- incubation** (in-kyoo-bay'shun) **period.** The time between the entrance of germs into the body and the appearance of symptoms.
- incus** (ing'kus). Anvil; one of the small bones of the inner ear.
- induration** (in-dyoo-ray'shun). Process of becoming hard.
- infantile paralysis** (in'fun-tighl puh-ra'l'i-sis). See poliomyelitis.
- infarct** (in'farkt). Area in which the tissue has broken down because of some obstruction in the blood supply to the area.
- infection** (in-fek'shun). Invasion of body tissue by disease germs; or the disease itself.
- inferiority** (in-feer-i-or'i-ti) **complex.** A group of symptoms associated with a feeling of inadequacy usually based on imagined defects.
- inflammation** (in-fluh-may'shun). Condition of redness and swelling accompanied by heat and pain; caused by irritation from bacteria or other agents.
- infrared** (in-fruh-red'). The invisible long-wave heat rays.
- inguinal** (ing'gwich-nl). Pertaining to the groin.
- INH.** Abbreviation of isonicotinic acid hydrazide, a substance used in the treatment of tuberculosis.
- inhalation** (in-huh-lay'shun). Intake of breath.
- inheritance** (in-hair'i-tns). Characteristics transmitted from parent to offspring.
- inhibition** (in-hi-bish'un). Interference with or impediment to an action.
- injection** (in-jek'shun). Forcing a substance into an area, usually by means of a syringe with a hollow needle.
- innocuous** (in-ahk'yoo-uhs). Harmless.
- innominate** (in-ahn'uh-nayt). Hip bone.
- inoculation** (in-ahk-yoo-lay'shun). The intentional planting in the body of germs or extracts to protect against disease.
- inoperable** (in-ahp'er-uh-bl). Not able to be cured by operation.
- inorganic** (in-or-gan'ik). Not of organic origin.
- insanity** (in-san'i-ti). Unsoundness of mind; mental disorder, usually chronic, in which the individual is not capable of reasoning, is irresponsible, and may suffer from delusions.
- insemination** (in-sem-uh-nay'shun). Depositing semen in the vagina.
artificial insemination. Introduction of semen into the vagina by artificial means.
- insomnia** (in-sahm'ni-uh). Inability to sleep.
- inspiration** (in-spi-ray'shun). Breathing in.
- insufficiency** (in-suh-fish'en-si). Weakness of an organ or a condition in which it is unable to perform its function.
- insulin** (in'suh-lin). Hormone produced

- in the pancreas and used by the tissues to get energy from blood sugar. This substance can be isolated from the pancreas of slaughterhouse animals and is used in treating diabetes.
- insulin shock.** Loss of consciousness caused by an overdose of insulin.
- integument** (in-teg'yoo-ment). The skin.
- intelligence** (in-tel'i-jens). Mental development.
- intercellular** (in-ter-sel'yoo-lar). Between the cells.
- intercostal** (in-ter-kahs'tl). Between the ribs.
- interne** (in-tern'). A hospital physician who lives within the institution and is in his first year of service.
- internist** (in-ter'nist). A physician who specializes in diseases of the internal organs.
- Intervertebral disc.** See disc.
- intestine** (in-tes'tin). The long coiled tube of the digestive system. It extends from the stomach to the anus.
- intima** (in'ti-muh). The innermost of the three layers of an artery.
- Intoxication** (in-tahk-si-kay'shun). 1. Poisoning. 2. Drunkenness.
- Intradermal** (in-truh-der'ml). Within or into the skin.
- Intramuscular** (in-truh-mus'kyoo-lar). Within or into a muscle.
- intravenous** (in-truh-vee'nus). Within or into a vein.
- Intravenous feeding.** Giving nourishment by allowing a solution of glucose to flow through a tube directly into a vein.
- Introvert** (in'troh-vert). One whose attention is focused on his inner self and has no interest in others or in things around him.
- Intubation** (in-too-bay'shun). Insertion of a tube into the body or into an organ.
- intumescence** (in-too-mes'ens). Swelling.
- in utero** (in yoo'ter-o). Within the uterus.
- invertase** (in-ver'tays). An enzyme from the pancreas which aids in converting cane sugar to invert sugar.
- involution of the uterus.** Shrinking of the uterus to normal size after childbirth.
- iodine** (igh'uh-dighn). A nonmetallic element which is necessary for the normal functioning of the thyroid gland. Medicinally, an alcoholic solution used as an antiseptic on the skin.
- radioactive iodine.** Used in treating goiter and cancers originating in thyroid tissue.
- Iodoform** (igh-o'doh-form). A yellow powder with a penetrating odor used as an anesthetic and antiseptic, particularly on wounds.
- ipecac** (ip'i-kak). An emetic obtained from the root of a tropical plant.
- IQ.** Abbreviation of intelligent quotient; 100 multiplied by the ratio of mental age to age in years.
- Iris** (igh'ris). The colored part of the eye, located between the lens and the cornea with an opening in the middle (the pupil).
- iritis** (igh-righ'tis). Inflammation of the iris.
- irradiation** (ir-ray-di-ay'shun). Treatment of disease with x-ray, radioactive material, ultraviolet rays, or infrared rays.
- Iron lung** (igh'ern luhng'). A respirator: a device which artificially expands and contracts the chest of a patient whose respiratory muscles are paralyzed.
- ischium** (is'ki-um). The lower hind part of the hip bone.
- islands or islets of Langerhans** (lahng'er-hans). Masses of very small cells in the pancreas which secrete insulin.
- isolation** (igh-suh-lay'shun). Placing a person having a communicable disease separate from others to prevent the disease from being spread to other people.
- isoleucine** (igh-so-loo'sin). An essential amino acid.
- isonicotinic** (igh'so-nik'o-tin-ik) acid. See INH.
- isotope** (igh'suh-tohp). A chemical element like another in structure and chemical properties but differing slightly in atomic weight or in radioactivity.

J

- Japanese river fever.** Tsutsugamushi fever; scrub typhus.
- jaundice** (jawn'dis). Yellowness of skin and eyes caused by an excess of bile pigment in the blood.

jaw, lumpy. A fungus disease of cattle transmissible to man.

jejunum (ji-joo'nūm). The part of the small intestine between the duodenum and the ileum.

Jenner (jen'er), **Edward** (1749-1823). English physician who introduced vaccination with cowpox virus to immunize against smallpox.

joint. Connection of two bones.

jugular (jug'yoo-ler). Pertaining to the neck or throat.

jugular veins. The large veins in the neck which carry blood from the head.

Jung (yoong), **Carl Gustav** (b. 1875). Swiss psychiatrist who carried on the work of Freud and has added many contributions of his own.

jungle rot. Common term for any fungus infection of the skin occurring in tropical regions.

K

Kahn test. A blood test for syphilis.

kala azar (kah'lah ah'zar). A chronic, often fatal disease found mainly in Asia. It is caused by a protozoan which is carried by sand flies that have bitten an infected person.

kaolin (kay'o-lin). A fine clay sometimes used in treating skin diseases.

Kenny (ken'ee) **method.** Treatment of muscles affected by poliomyelitis developed by Sister Elizabeth Kenny, an Australian nurse. It is based on the use of hot packs to prevent muscle spasms and exercises to re-educate the muscles.

keratin (kehr'uh-tin). Substance which forms the principal part of horny tissues, such as fingernails and toenails, and is also found in the skin and hair. It is not dissolved by gastric juice and so is used to coat pills that are meant to be dissolved in the intestines.

keratitis (kehr-uh-tigh'tis). Inflammation of the cornea.

infectious keratitis. A virus infection of the eye causing swelling, a watery discharge, and opaque spots on the cornea. It is spread by the handling of articles soiled by an infected person.

kidney (kid'ni). One of the two bean-

shaped glands in the back of the abdomen. It acts as a purifying system for the blood and excretes urine.

kineplasty (kin'i-plas-ti). Method of amputation which permits the use of the voluntary muscles in regulating an artificial limb.

kinesia (kuh-nee'zhuh). Motion sickness.

kinesthesia (kin-es-thee'zhuh). The sense of position, weight, and motion.

kleptomania (klep-tuh-may'ni-uh). Abnormal desire to steal.

Kline (kline) **test.** A test for syphilis.

kneecap. Patella.

knee jerk. Reflex which causes the foot to be kicked forward when the ligament below the kneecap is tapped.

Koch (kohk), **Robert** (1843-1910). German physician who isolated and described the organisms causing tuberculosis, cholera, and anthrax.

kyphosis (kigh-foh'sis). Body deformity resulting in round shoulders or hump back.

L

labia (lay'bi-uh). Liplike structures.

labia majora and **minora.** Vaginal lips.

labor. The process of childbirth.

lacerated (las'er-ay-ted). Torn.

laceration (las'er-ay'shun). A wound caused by the cutting or tearing of tissue.

lacrimal (lak'ri-mul). 1. Pertaining to tears. 2. The gland which secretes tears.

lactase (lak'tays). An enzyme found in the intestinal juice to digest milk sugar.

lactation (lak-tay'shun). The secretion of milk.

lacteal (lak'ti-ul). One of the lymphatic ducts in the intestines which takes up digested fat (chyle).

lactic (lak'tik) **acid.** A waste product from muscles.

Laënnec (lan-ek, or lay-uh-neck'), **René Théophile Hyacinthe** (1781-1826). French physician who invented the stethoscope.

lance (lans). To cut open with a knife.

lancet (lan'set). A small two-edged surgical knife.

Landsteiner (land'stigh-ner), **Karl** (1868-1943). Scientist who developed a

- method of blood typing and helped show the significance of the Rh factor.
- lanolin** (lan'o-lin). A fat obtained from wool and used as a base for ointments and skin lotions.
- laryngectomy** (lar-in-jek'tuh-mi). Surgical removal of the larynx.
- laryngitis** (lar-in-jigh'tis). Inflammation of the larynx.
- larynx** (lar'ingks). The voice-box; a cartilaginous structure which contains the vocal cords and produces most of the sounds made by the voice.
- latent** (lay'tent). Hidden.
- laudanum** (law'duh-nm). Tincture of opium.
- laxative** (laks'uh-tiv). An agent that loosens the bowels; a mild cathartic.
- lecithin** (les'i-thin). A waxy compound containing fatty acids and found normally in plant and animal tissues, especially nervous tissue.
- van Leeuwenhoek** (van-lay'ven-hook). **Antony** (1632-1723). Dutch maker of microscopes who described many microorganisms and microscopic structures.
- Leishmania** (lighsh-may'ni-uh). A genus of protozoa which includes some disease-producers. They are generally spread by a certain type of fly found mainly in Asia and South America.
- leishmaniasis** (lighsh-muh-nigh'uh-sis). Bubos; any infection caused by *Leishmania*.
- lens, crystalline**. The colorless capsule behind the pupil of the eye. It focuses light rays on the retina.
- leprosy** (lep'ruh-si). Hansen's disease; a chronic infectious disease caused by bacteria and found mainly in tropical and semitropical regions. It affects the nerves or the skin with its subcutaneous tissues causing ulcers and mutilation. It is not easily communicable to others.
- leptospirosis** (lep-toh-spigh-ro'sis). A disease caused by spirochetes and seen mainly in dogs and rats but communicable to man. It may be manifest by the appearance of jaundice.
- lesion** (lee'zhn). Any wound, sore, tumor, area of tissue breakdown, or other unhealthy change in tissue.
- leucotomy** (loo-kaht'uh-mi). See lobotomy.
- leukocyte** (loo'kuh-sight). One of the white blood cells. The leukocytes are larger than the red blood cells and have large irregularly shaped nuclei. One of the functions of these cells is to engulf any germs or foreign particles in the blood, thus helping the body to resist infection.
- leukopenia** (loo-ko-pee'ni-uh). Condition in which there are fewer leukocytes present in the blood than normally.
- leukorrhea** (loo-ko-ree'uh). A whitish mucus discharged from the vagina. A small amount of discharge is not abnormal but an increase in the amount may be an indication of infection.
- libido** (li-bee'do). Conscious or unconscious sexual desire.
- ligament** (lig'uh-ment). A tough band of tissue which connects bones or supports organs.
- ligature** (lig'uh-cher). The thread used in surgery for tying off blood vessels to prevent bleeding or for constricting any other structures.
- liniment** (lin'i-ment). A liquid to be rubbed on the skin.
- lipase** (lip'ays). An enzyme which digests fats. It is produced in most of the digestive organs.
- lipid** (lip'id). A fat or fatlike substance, such as fatty acids or soap.
- Lister** (lis'ter), **Joseph** (1827-1912). English Quaker surgeon who introduced the idea of antiseptic surgery by using carbolic acid on the wound, to clean instruments and to spray the air of the operating room.
- lithotomy** (lith-aht'tuh-mi). Removing a stone by cutting through the bladder.
- litholopaxy** (lith-ahl'uh-pak-si). Crushing of a stone in the bladder and removal of the fragments by washing out the bladder through a catheter.
- liver** (liv'er). The large four-lobed red organ situated in the upper right portion of the abdomen. It has many functions, including the manufacture of bile and storage of excess carbohydrates.
- liver injection**. Extract from livers of slaughterhouse animals, used to treat pernicious anemia.
- lobotomy** (lo-baht'uh-mi). An operation performed on violent uncontrollable mental patients to calm them. The nerve fibers leading to the frontal lobes of the brain are cut.

lochia (lo'ki-uh). Vaginal discharge which follows childbirth. It consists of blood, mucus, and tissue, and lasts for several weeks.

lockjaw. See tetanus.

lordosis (lor-doh'sis). Sway-back; abnormal posture in which the inward curve of the back is exaggerated.

louse (lous). A small parasitic animal which infects the hairy parts of the body and may carry disease germs.

lozenge (lahz'inj). A medicated tablet meant to be dissolved slowly in the mouth.

lues (loo'eez). Syphilis.

lumbago (lum-bay'go). An ache in the lower part of the back.

lumbar (lum'ber). Pertaining to the lower back just between the pelvis and the ribs.

luminal (loo'mi-nul). Pertaining to the hollow of a tube.

lung. One of the two organs of breathing which are situated in the chest beneath the ribs. Each consists of spongy red tissue surrounding tree-like branches of the bronchus. In the lungs the blood receives oxygen from the air and gives up carbon dioxide.

lupus (loo'pus), or **lupus vulgaris**. Tuberculosis of the skin.

lupus erythematosus (ehr-i-thee-muh-toh'sis). A disease (nontuberculous) of the skin of unknown cause. It produces red scaly patches on the skin.

lymph (limf). The clear yellowish watery fluid which is contained in the lymph vessels and around body cells.

lymph node. One of the many oval-shaped nodules along a lymph vessel. These nodes filter out germs and foreign bodies from the lymph.

lymphocyte (lim'foh-sight). A type of leukocyte found in the lymph and the blood. It contains few granules and has a single nucleus.

lymphocytic choriomeningitis (lim-foh-si'tik koh-ri-o-men-in-jigh'tis). A type of meningitis caused by a virus carried by the house mouse and spread to man by objects contaminated with mouse secretions or feces.

lymphogranuloma venereum (veh-neer'-i-um). A virus disease which causes sores in the genital region and, in the male, enlargement of the lymph nodes in the groin.

Lysol (ligh'sawl). A disinfectant and an-

tiseptic which contains a substance related to cresol.

lytic (lit'ik). 1. Pertaining to breakdown of cells by a lysin. 2. Pertaining to the subsiding of symptoms of a disease.

M

maceration (mas-er-ay'shun). The softening and deterioration of tissue.

macroscopic (mak-ro-skahp'ik). Seen with the naked eye.

macula (mak'yuh-luh). Discolored area on the skin; spot.

madarosis (mad-uh-ro'sis). Loss of eyelashes and eyebrows.

Madura (mad-yoo'ruh) **foot**. Mycetoma; a fungus infection of the foot found in India.

Magendie (may-jen'dee), **Francois** (1783-1855). French physiologist who investigated the action of nerves and the effects of drugs. He showed that some nerves transmit sensation and others stimulate muscles.

maidenhead. Hymen; the membrane that partly covers the vaginal opening.

malacotic (mal-uh-kaht'ik) **teeth**. Teeth of a rather soft texture which decay more easily than normal teeth.

malaise (mal-ayz'). Discomfort; a feeling of being sick.

malaria (muh-lair'i-uh). A disease found mainly in tropical and subtropical areas and marked by intermittent attacks of fever, chills, and sweating. It is caused by a protozoan parasite carried by the anopheles mosquito.

mal de mer (mal'duh-mair'). Seasickness.

malignant (muh-lig'nent). Tending to become worse.

malingering (muh-ling'ger-er). One who pretends to be ill.

malleolus (mal-ee'o-lus). The round protruding bone on either side of the ankle.

malleus (mal'i-us). The hammer-shaped bone of the inner ear. It is the largest of the three small bones.

malnutrition (mal-noo-trish'un). Improper nourishment resulting either from some defect in the body's assimilation or from poor diet.

malocclusion (mal-ahk-kloo'zhun). Abnormal position of the teeth in such a

way that the teeth of the upper jaw do not mesh perfectly with those of the lower jaw, thus decreasing efficiency in chewing.

Malta (mawl'tuh) **fever**. Undulant fever; brucellosis.

mammary (mam'uh-ri) **gland**. The gland in the breast of a female which secretes milk.

mandible (man'di-bl). The lower jaw.

mandrake (man'drayk). A plant with properties like belladonna.

mania (may'ni-uh). 1. A type of insanity marked by great excitement, exaggerated feelings of happiness, hallucinations, and violent action. 2. Strong desire or enthusiasm.

manic-depressive psychosis. A type of mental illness in which periods of melancholy and depression alternate with periods of great excitement.

Mantoux (man-too') **test**. Skin test for tuberculosis in which tuberculin is injected into the skin. If the area becomes red and swollen in a few days the test is positive, indicating that the person has been infected at some time with tuberculosis germs. Further checks for the disease, such as x-ray, should be made.

manubrium (man-oo'bri-um). The upper part of the breast bone or the "handle" of the malleus bone.

marijuana or **marihuana** (mah-ri-hwah'-nah). The dried leaves of the cannabis plant which contain a habit-forming drug.

marrow (mar'oh). The soft material in the cavities of bones.

red marrow. Marrow in which red blood cells are formed. In adults only a few areas have red marrow but in children most marrow is red.

yellow marrow. Marrow which no longer makes red blood cells. It contains mostly fat cells.

masochism (mas'uh-kizm). Sexual perversion in which an individual gets pleasure from being hurt.

massage (muh-sahzh'). Rubbing and kneading the muscles.

mastectomy (mas-tek'tuh-mi). Surgical removal of the breast.

mastic (mas'tik). Resin from the mastic tree formerly used as a styptic and as filling for teeth.

mastication (mas-ti-kay'shun). Act of chewing.

mastitis (mas-tigh'tis). Inflammation of the breast.

mastoid (mas'toyd) **bone**. The part of the skull which forms the hump behind the ear. It contains several hollow areas (cells) which connect with the middle ear.

mastoiditis (mas-toyd-igh'tis). Inflammation in the mastoid bone.

mastoidectomy (mas-toyd-ek'tuh-mi). Operation of scraping out the mastoid bone and removing the bony partitions between the cells.

masturbation (mas-ter-bay'shun). Handling one's own genitals to produce sexual excitement.

materia medica (muh-tir'i-uh med'i-kuh). Branch of medical study which deals with medicines, their preparation and use.

maxilla (mak-sil'uh). The upper jaw.

Mayo (may'o). **William James** (1861-1939) and **Charles Horace** (1865-1939). American surgeons who started a famous clinic.

McDowell, Ephraim (1771-1830). Backwoods Kentucky doctor who successfully removed a large ovarian cyst.

meatus (mee-ay'tus). Passage or opening.

meconium (mi-ko'ni-um). The pasty greenish feces passed by newborn babies.

mediastinum (mee-di-as-tee'num). 1. A partition in an organ or cavity. 2. The space in the middle of the chest which separates the lungs. The mediastinum contains the heart, trachea, esophagus, and thymus.

medicine (med'i-sin). 1. A substance used to treat disease. 2. Science of healing.

internal medicine. The study of those diseases which are not treated by surgery.

patent medicine. A manufactured medicine whose composition is patented.

preventive medicine. A branch of medicine which aims at preventing disease.

proprietary medicine. A manufactured medicine whose formula or method of preparation belongs to the manufacturer.

medicolegal (med-i-ko-lee'gl.) Aspects of medicine which also relate to law.
medulla (mi-dul'uh). Central portion of an organ.

medulla oblongata (abb-lawng-gah'tuh). The lower portion of the brain which connects with the spinal cord.

megalomania (meg-uh-lo-mayn'i-uh). Insanity in which the patient thinks himself great or powerful.

melancholia (mel-en-ko'li-uh). Depressed mental state in which the patient is indifferent to his surroundings and shows lessened mental and physical activity.

melanin (mel'uh-nin). The dark pigment in hair, tanned skin, and other dark-colored tissues.

melanoma (mel-uh-no'muh). A tumor made up of cells containing melanin.

membrane (mem'brayn). A thin layer of tissue which covers, lines, or partitions an organ.

menarche (men-ar'ki). The first menstrual period.

meninges (mi-nin'jeez). The membranes covering the brain and spinal cord.

meningitis (men-in-jigh'tis). Inflammation of the meninges.

epidemic cerebrospinal meningitis.

An acute infectious disease especially of children, marked by vomiting, convulsions, and headache. It is caused by bacteria (meningococcus).

menopause (men-o-pawz). Period when the menstrual cycle stops; the change of life.

menorrhagia (men-o-ray'ji-uh). Unusually long or profuse menstrual flow.

menorrhagia (men-o-ral'ji-uh). Pain in menstruation.

menorrhea (men-o-ree'uh). Normal menstruation.

menstruation (men-stroo-ay'shun). The periodic discharge of blood from the vagina (usually monthly) in women.
menthol (men'thol). A pleasant-smelling substance which has anesthetic and antiseptic properties. It increases the ability to feel cold and so seems to produce a cooling effect.

mercurochrome (mer-kyoo'ro-krohm). A red antiseptic containing mercury.
merthiolate (mer-thigh'o-layt). A disinfectant and antiseptic substance which contains mercury.

mesencephalon (mes-en-sef'uh-lon). Mid-brain; the part of the brain between the cerebrum and the cerebellum.

mesentery (mes'en-ter-i). The folds in the abdominal lining (peritoneum) that support the abdominal organs and attach the intestines to the abdominal wall. It carries the nerves and blood vessels to the abdominal organs.

Mesmer (mes'mer), **Franz A.** (1733-1815). Used "animal magnetism" or hypnotism to treat mental patients.

metabolism (meh-tab'o-lizm). The sum total of all the chemical and physical changes in the body, including tissue construction, destruction, and maintenance.

basal metabolism. See **basal**.

metacarpus (met-uh-kar'pus). The part of the hand between the wrist and the fingers.

metaphen (met'uh-fen). A mercury compound used as a skin disinfectant.

metastasis (meh-tas'tuh-sis). The spread of a disease from one part of the body to another usually by means of germs or cells carried from the diseased part by the blood or lymph.

Metchnikoff (meh'ni-kahf), **Elie** (1845-1916). Investigated the mechanism of immunity to disease and discovered that white blood cells engulf and ingest bacteria. He received the Nobel prize together with Ehrlich in 1908.

metencephalon (met-en-sef'uh-lon). 1. The cerebellum. 2. The hindbrain of the embryo.

methemoglobin (met-hee-mo-glo'bin). Hemoglobin which has decomposed or been deoxygenated and changed by poisons, causing it to become chocolate brown in color.

metritis (mi-trigh'tis). Inflammation of the uterus.

microbe (migh'kroh). 1. Germ. 2. Microorganism; an organism which cannot be seen with the unaided eye, such as bacteria and protozoa.

microcardia (migh-kro-kar'di-uh). Abnormally small heart.

microcephalic (migh-kro-seh-fal'ik). Having a small head.

microscope (migh'kro-skohp). An instrument to magnify very small objects.

- electron microscope.** An instrument that magnifies by means of electric and magnetic fields instead of lenses.
- light microscope.** One which contains lenses arranged in such a way as to magnify objects.
- microtome** (migh'kro-tohm). Instrument for making extremely thin slices of tissue for microscopic study.
- micturition** (mik-tyoo-rish'un). Urination.
- migraine** (migh'grayn). Periodic sick-headache; pain in the head usually only on one side, accompanied by nausea, vomiting, and interferences in vision.
- milk of magnesia** (mag-nee'zhi-uh). A suspension of magnesium hydroxide that has laxative action.
- mineral oil.** An oil obtained from petroleum and used as a laxative.
- Minot, George Richards** (1885-1950). American physician who developed dietary use of liver in treating pernicious anemia. He received the Nobel prize in 1934 together with W. P. Murphy and G. H. Whipple.
- miosis** (migh-o'sis). 1. Contraction of the pupil of the eye. 2. The last phase in the development of an egg or sperm.
- miscarriage** (mis-ka'rij). Expulsion of the fetus from the uterus before it is able to live, between the 4th and 7th months of pregnancy.
- mite** (migh-ti). A small parasitic insect which may infest man and cause skin irritations and spread disease germs.
- mitosis** (migh-toh'sis). Cell division.
- mitral** (migh'tral) **valve.** The valve between the upper and lower chambers in the left side of the heart.
- molar** (mo'ler). One of the grinding teeth in the back of both jaws.
- mole** (mohl). A brownish spot on the skin; a nevus.
- mongolism** (mahn'go-lizm) or **Mongolian idiocy.** A congenital condition in which the eyes are slanted, the face is broad, and the muscles are flabby. It is often accompanied by mental deficiency.
- moniliasis** (mahn-il-igh'uh-sis). Any infection caused by fungus of the Monilia group. Thrush is one type.
- monocyte** (mahn'o-sight). The largest type of leukocyte. It contains a single nucleus and faint granules. 2 to 6 per cent of all leukocytes are monocytes.
- mononucleosis** (mahn-o-noo-klee-o'sis). Condition in which there is a large number of monocytes in the blood; glandular fever.
- infectious mononucleosis.** A communicable disease of unknown origin which is marked by fever, swollen lymph nodes, and an increase in monocytes in the blood.
- mons pubis** (monz pyoo'bis) or **mons veneris.** The elevated area in the front of the body of the female, formed by a pad of fatty tissue over the pubic symphysis.
- monster** (mon'ster). A malformed fetus.
- morbid** (mor'bid). Unhealthy.
- morbidity rate.** Sick rate; the number of cases per year of a specific disease per 100,000 people.
- morgue** (morg). Place where dead bodies are stored temporarily.
- moribund** (mawr'uh-buhnd). Near death.
- morning sickness.** Feeling of nausea in the first few months of pregnancy. It occurs chiefly in the morning.
- moron** (mo'rahn). Feeble-minded person with a mental age between 7 and 12.
- morphine** (mawr'feen). A narcotic obtained from opium and used to relieve pain.
- morphosis** (mor-fo'sis). Formation of an organ or any of its parts.
- mortality** (mor-tal'i-ti). Death rate.
- Morton, William T. G.** (1819-1868). American physician who pioneered in the use of ether for painless surgery.
- motor** (mo'ter). Affecting movement.
- mountain fever.** Tick fever.
- mountain sickness.** Sickness caused by low atmospheric pressure such as is found on mountains and in air-planes. It is marked by nausea, headache, thirst, and difficulty in breathing.
- mucin** (myoo'sin). A glycoprotein which is the main part of mucus.
- mucopurulent** (myoo-ko-pvoo'roo-lent). Containing mucus and pus.
- mucosa** (myoo-ko'suh). Mucous membrane; tissues that secrete mucus.
- mucous** (myoo'kus). Pertaining to mucus.
- mucus** (myoo'kus). The slimy secretion of the mucous glands which moistens body linings.

multicellular (mul-ti-sel'yoo-ler). Composed of many cells.

murmur (mer'mer). See heart murmur.

muscle (muhs'l). An organ which causes movement of some part of the body by means of its ability to shorten.

musculature (mus'kyoo-luh-tyoor). The muscles of the body or of any part.

mute (nyoot). Unable to speak.

myalgia (migh-al'ji-uh). Pain in a muscle.

myasthenia (migh-as-thee'ni-uh). Muscle weakness; fatigue.

mycetoma (migh-si-toh'muh). Madura foot; a fungus infection of the foot which produces large pus-filled nodules. Found in India.

mydriasis (mid-righ'uh-sis). Dilatation of the pupil of the eye.

myelin (migh'el-in). The fatlike substance which forms a sheath around some nerves.

myelitis (migh-uh-ligh'tis). 1. Inflammation of the spinal cord. 2. Inflammation of marrow.

myeloma (migh-el-o'muh). A malignant tumor composed of cells of the same type as those in bone marrow.

myoma (migh-o'muh). Tumor formed of muscular tissue; may or may not be cancerous.

myopia (migh-o'pi-uh). Nearsightedness; condition in which the eyeball is too convex, causing light rays to focus in front of the retina.

myxadenoma (miks-ad-en-o'muh). A tumor that contains structures like those of a mucous gland.

N

nail bed. The part of the finger covered by the nail.

narcosis (nar-ko'sis). A condition of stupor and loss of feeling produced by a narcotic.

narcotic (nahr-kaht'ik). A medicine which produces sleep or stupor and relieves pain.

narcosynthesis (nar-ko-sin'thi-sis). A method of treating psychoneurosis in which the patient is put into a hypnotic state to bring out his hidden emotions.

nares (nay'reez). Nostrils; the openings of the nose.

nasal feeding. Giving nourishing fluids through a rubber tube which has been passed through the nose down into the stomach.

nasopharyngeal (nay-zo-fuh-rin'ji-ul). Pertaining to the part of the pharynx directly over the roof of the mouth.

nausea (naw'shi-uh). State of feeling sick at the stomach; a tendency to vomit.

navel (nay'vl). Umbilicus; the depression in the belly which marks the point where the umbilical cord had been attached during fetal life.

nearsightedness. See myopia.

nebula (neb'yoo-luh). Faint cloudiness on the cornea of the eye.

necatoriasis (ni-ka-tuh-righ'uh-sis). Hook-worm disease.

necropsy (nek'rahp-si). Examination after death.

necrosis (ni-kro'sis). The death and breakdown of tissues which are surrounded by healthy tissues.

nembutal (nem'byoo-tal). A barbiturate used as a sedative, and for relief from convulsions; pentobarbital sodium.

neomycin (nee-o-migh'sin). An antibiotic from a mold. It is used against infections which have become resistant to other antibiotics, but must be used with caution to avoid kidney damage.

neoplasm (nee-o-plazm). New and abnormal growth; tumor.

neosalvarsan (nee-o-sal'var-san). A compound made from salvarsan and also used in treating syphilis. Also called nearsphenamine.

neosynephrine (nee-o-sin-ef'rin) **hydrochloride**. Substance used in nose drops and eye drops to relieve congestion; phenylephrine hydrochloride.

nephrectomy (nef-rek'tuh-mi). Surgical removal of a kidney.

nephritis (ni-frigh'tis). Inflammation of a kidney.

nephron (nef'ron). One of the many units of a kidney in which waste is removed from the blood and carried to the kidney pelvis.

nephrosis (ni-fro'sis). A disease of the kidney in which there is degeneration of tissue without any apparent inflammation.

nephrostomy (ni-frahs'tuh-mi). Surgical formation of an artificial outlet from the kidney to the outside of the body.

nerve (nerv). A white cordlike tissue composed of fibers that can carry nerve impulses. It connects the brain and spinal cord with other parts of the body.

cranial nerve. A nerve that connects with the brain. See under cranial for the list of cranial nerves.

mixed nerve. One which contains both sensory and motor fibers.

motor nerve. One which carries impulses from the brain or spinal cord to muscles of the body and causes them to contract.

sensory nerve. One which carries impulses to the brain or spinal cord from another part of the body.

spinal nerve. A nerve which connects with the spinal cord. There are 31 pairs of spinal nerves.

nervous system. The entire apparatus of the body concerned with carrying impulses throughout the body. It includes the brain, spinal cord, nerves, and ganglions.

autonomic nervous system. The system of nerves which regulate involuntary actions, such as those of the digestive organs, blood vessels, heart, kidneys, glands, etc. It is divided into the sympathetic and the parasympathetic nervous systems.

parasympathetic nervous system. Nerves that dilate blood vessels, slow the heart beat, and stimulate secretions.

sympathetic nervous system. Spinal nerves that act in opposition to the parasympathetic nerves. They contract blood vessels, increase the heart rate, and inhibit stomach and glandular secretion.

neuralgia (noo-ral'ji-uh). Pain in a nerve or along the course of a nerve. The sharp stabbing pain usually lasts only a short time but recurs suddenly.

neurasthenia (noo-ras-thee'ni-uh). Nervous prostration; a condition in which one tires easily and suffers from weakness and various aches and pains.

neuritis (noo-righ'tis). Inflammation of a nerve. There are many different forms with different effects. Some increase the sensitivity in the affected

part; others produce paralysis or numbness; some cause pain and inflammation.

neurofibroma (noo-ro-figh-bro'muh). A tumor made up of both nervous and connective tissues, caused by the overgrowth of the tissues surrounding the nerve fibers.

neurofibromatosis (noo-ro-figh-bro-muh-toh'sis). Condition in which there are many painless neurofibromas under the skin or along the course of a nerve. The tendency to this condition seems to be inherited.

neuroglia (noo-rahg'li-uh). The structure which supports the nervous tissue in the brain, spinal cord, and nerves. It consists of a fibrous network in which there are "spider cells," cells which have thin extensions in every direction.

neurology (noo-rah'l'uh-ji). The study of nerves.

neuron (noo'rahn). A nerve cell.

neurosis (noo-to'sis). A nervous disorder with no changes in tissue structure.

neurotic (noo-raht'ik). Pertaining to or affected by neurosis.

neutralize (noo'truh-lighz). To counteract the effect of a substance such as a toxin, an acid, or an alkali with another substance of equal strength but producing the opposite effect.

nevus (nee'vus). A congenital mark on the skin, either a pigmented area or a collection of tiny blood vessels; birthmark or mole.

niacin (nigh'uh-sin) or **nicotinic** (nik'o-tin-ik) **acid**. One of the vitamins in the vitamin B complex. It is found in lean meat, liver, milk, and rice. Medicinally it is used to treat pellagra.

nictation (nik-tay'shun) or **nictitation** (nik-tuh-tay'shun). The act of winking or an abnormal spasm in the eyelid.

Nightingale, Florence (1820-1910). English nurse who organized a nursing corps during the Crimean War and founded the modern form of nursing.

nit. Egg of a louse.

nitrogen mustard. A gas used medicinally to destroy diseased tissue in Hodgkin's disease, lymphosarcoma, and chronic leukemia.

nitroglycerin (nigh-tro-glis'er-in). An oily explosive liquid used medicinally to prevent attacks of asthma, angina pectoris, and apoplexy.

nitrous oxide. Laughing gas; a gas which produces general anesthesia when inhaled.

node (nohd). A knoblike structure.

Novocaine (no'vuh-kayn). Brand name of procaine hydrochloride, an anesthetic.

nucleus (noo'kli-us). The central body and most essential part of a cell. All human body cells except mature red blood cells have nuclei.

nurse. A person who takes care of the sick, injured, or helpless.

graduate nurse. One who has graduated from an accredited training school.

practical nurse. One trained in the less technical duties of nursing.

private nurse. One who takes care of only one patient.

public health nurse. A graduate nurse employed by the community board of health to promote health by teaching good health practices, by aiding in disease prevention, and by visiting sick persons.

registered nurse. A graduate nurse who has been licensed and registered by a state authority.

visiting nurse. A graduate nurse employed by an agency to visit and care for patients in their homes, if they cannot afford a full-time private nurse.

nutrient (noo'tri-ent). 1. A food which provides material needed by the body. 2. Providing nourishment.

nutrition (noo-trish'un). The process of supplying food and necessary material to the body or any of its parts so that it may grow or maintain itself in a healthy condition.

nux vomica (nuks vahm'i-kuh). A substance obtained from the seed of an Indian tree. It contains strychnine but in small doses it stimulates the appetite and nerves.

nycturia (nik-tyoo'ri-uh) or **nocturia** (nahk-tyoo'ri-uh). Excessive urination at night.

nymphomania (nim-foh-mayn'i-uh). Abnormally great sexual desire in a woman.

nystagmus (nis-tag'mus). Continuous involuntary movements of the eyeball. The condition may be congenital or the result of a disease.

O

obesity (oh-bees'i-ti). Excessive fatness; corpulence.

obstetrics (ahb-stet'riks). The branch of medicine which deals with care of women during pregnancy, childbirth, and the period immediately following childbirth.

occipital (ahk-sip'uh-tl). Pertaining to the back part of the head or to the part of the brain in this part of the skull.

occlusion (ahk-kloo'zhun). The act of closing; in reference to teeth it means the fitting together of the upper and lower teeth in chewing.

coronary occlusion. Blocking of an artery that supplies blood to the heart muscle.

occult (uh-kuhl't') **blood.** Blood present in feces or other material in such small amount that it can be detected only by chemical tests.

occupational therapy. The teaching of some useful trade or handicraft to sick or handicapped persons to give them something to do while recovering or to help them to earn a living.

ocular (ahk'yuh-ler). Pertaining to the eye.

oculist (ahk'yuh-list). A physician who specializes in treating eye diseases.

odontitis (o-dahn-tigh'tis). Inflammation of a tooth.

odontoscope (o-dahn'tuh-skohp). A dental mirror for examining teeth.

odynophagia (ahd-in-o-fay'ji-uh). Pain in swallowing food.

Oedipus (ed'i-pus) **complex.** A series of reactions thought to be caused by a son's suppressed sexual desire for his mother.

ointment (oynt'ment). A medicine for the skin prepared with a fatty base.

olfactory (ahl-fak'tuh-ri). Pertaining to the sense of smell.

oligocythemia (ahl-i-go-sigh-thee'mi-uh). Condition of having fewer than the normal number of red cells in the blood.

oliguria (ahl-i-gyoo'ri-uh). Abnormally scanty urine.

omentum (o-men'tum). The fold of peritoneum which covers and connects the stomach and other abdominal organs.

- greater omentum.** The fold which covers the large curve of the stomach and the intestines and attaches to the large intestine.
- lesser omentum.** The fold which joins the small curve of the stomach and the liver.
- omphalitis** (ahm-ful'ligh'tis). Inflammation of the navel.
- oncology** (ahng-kahl'uh-ji). Study of tumors.
- onychchia** (o-nik'i-uh). Inflammation of the tissue from which the nail grows.
- onycholysis** (ahn-i-kahl'is-is). Loosening of the nail.
- onychophagy** (ahn-i-kahf'uh-ji). Nail-biting.
- oophoroma** (o-ahf-o-ro'muh). Cancer of the ovary.
- oosperm** (o'o-sperm). A fertilized egg.
- ophthalmia** (ahf-thal'mi-uh). Inflammation of the eye or of the mucous lining of the eyelid.
- ophthalmitis** (ahf-thal-migh'tis). Inflammation of the eye.
- ophthalmology** (ahf-thal-mahl'uh-ji). The branch of medicine dealing with the eye, its defects and diseases.
- ophthalmoscope** (ahf-thal'muh-skohp). An instrument for examining the interior of the eye.
- opiate** (o'pi-ayt). 1. A substance containing opium. 2. A substance which produces sleep.
- opium** (o'pi-um). Narcotic obtained from the juice of the opium poppy. It is habit-forming and poisonous. Used medicinally as a pain-reliever, hypnotic, and treatment for some types of diarrhea and other conditions.
- optician** (ahp-tish'n). One trained to grind lenses or glasses from a prescription.
- optometrist** (ahp-tahm'i-trist). One trained in examining eyes for the purpose of prescribing glasses.
- oral** (oh'rul). Pertaining to the mouth.
- orbit** (or'bit). Eye socket.
- orchiectomy** (or-ki-ek'tuh-mi) or **orchectomy** or **orchotomy**. Surgical removal of a testicle.
- orchiorrhaphy** (or-ki-or'uh-fi). Surgical correction of an undescended testis.
- orchitis** (or-kigh'tis). Inflammation of the testicle.
- organ** (or'gan). Any part of the body with a special function.
- orgasm** (or'gazm). Climax of sexual intercourse.
- origin of a muscle.** The more fixed end of a muscle.
- orthodontics** (or-tho-dahn'tiks). Straightening of teeth.
- orthopedics** (or-tho-pee'diks). The branch of surgery concerned with correcting deformities and treating diseases of the bones, joints, muscles, and spine. Treatment may be by use of apparatus, manipulation, or operation.
- orthopedic surgeon.** Orthopedist; one who practices orthopedics.
- orthopnea** (or-thahp-nee'uh). Condition in which the person must stand or sit up in order to breathe easily.
- orthostatic** (or-tho-stat'ik). Standing erect.
- orthotonus** (or-thaht'o-nus). A spasm in which the body becomes straight and rigid. Seen in tetanus.
- os** (ahs) pl. **ora**. Mouth.
- os** (ahs) pl. **ossa**. Bone.
- oschitis** (ahs-kigh'tis). Inflammation of the scrotum.
- Osler** (ohs'ler), **Sir William** (1849-1919). Famous professor of medicine at Johns Hopkins and Oxford.
- osmosis** (ahs-mo'sis). Passage of a substance from one solution to another through a porous membrane. This is the method by which substances in tissues and blood are exchanged.
- ossicle** (ahs'i-kl). A very small bone, such as the three bones of the inner ear.
- ossification** (ahs-i-fi-kay'shun). Formation of bone or the process of changing cartilage into bone.
- osteitis** (ahs-ti-igh'tis). Inflammation of bone.
- osteochondritis** (ahs-ti-o-kahn-drigh'tis). Inflammation of bone and cartilage.
- osteoclasia** (ahs-ti-o-klay'zhi-uh). Surgical breaking of a bone to correct a deformity.
- osteomalacia** (ahs-ti-o-muh-lay'shi-uh). Softening of the bones due to calcium deficiency and lack of vitamin D, and some hormonal disturbances. The bones become more flexible and brittle and cause severe pains. It may begin during pregnancy.
- osteomyelitis** (ahs-ti-o-migh-ch-ligh'tis). Inflammation of bone marrow.
- osteonculus** (ahs-ti-ahng'kus) or **osteoma**

(ahs-ti-o'-muh). Tumor composed of bone tissue. It may be an outgrowth of bone or may occur in the tissues.
osteopathy (ahs-ti-ahp'uh-thi). A system of treating disease mainly by massage and manipulation of the bones.
otitis (o-tigh'tis). Inflammation of the ear.

otitis media. Inflammation of the middle ear.

otolaryngology (o-toh-lar-in-gahl'uh-ji). Branch of medicine dealing with the ear, nose, and throat.

otomycosis (o-toh-migh-ko'sis). A disease of the ear caused by a fungus.

otoscope (o'toh-skohp). Instrument for examining the ear.

out-patient department. Dispensary; part of the hospital where persons are treated who do not need to be kept at the hospital. In many hospitals such care is given at low cost or free to those who can prove their need.

ovariectomy (o-va-ri-ek'tuh-mi). Surgical removal of an ovary.

ovariostomy (o-va-ri-ahs'tuh-mi). Cutting into the ovary to drain an ovarian cyst.

ovaritis (o-va-righ'tis). Inflammation of an ovary.

ovary (o'vuh-ri). Either of the two female reproductive glands which produce the eggs (ova) and female hormones.

overbite. A condition in which the upper front teeth overlap the lower teeth when biting.

oviduct (o'vuh-dukt). The tube connecting the ovary and the uterus through which the egg cell must pass; also called the Fallopian tube.

ovulation (o-vyoo-lay'shun). The maturing of an egg cell and its release from the ovary. This takes place approximately every 28 days, midway between menstrual periods.

ovum (o'vum). An egg cell; the sex cell from the woman. When fertilized the cell develops from a size of 1/125 inch diameter into a human baby.

oxygen (ahk'si-jen). A colorless gas found in air and necessary for life.

oxygenation (ahk-si-jen-ay'shun). Saturation of a substance with oxygen.

oxyhemoglobin (ahk-si-hee-mo-glo'bin). Hemoglobin which has combined with oxygen. It gives blood a bright red color.

oxyhydrocephalus (ahk-si-high-dro-sef'-uh-lus). A condition in which there is an excess of fluid in the head, causing the head to assume a pointed shape.

oxytocic (ahk-si-toh'sik). 1. A substance which hastens the process of childbirth. 2. Hastening childbirth.

oxytocin (ahk-si-toh'sin). A substance produced by the pituitary gland which stimulates the uterus to contract in childbirth.

ozone (o'zohn). A form of oxygen. It is used as an antiseptic and as a disinfectant, particularly for swimming pools.

P

PABA. Abbreviation for para-aminobenzoic acid; an agent believed to be a member of the vitamin B complex. It is used in treatment for rickettsial diseases such as Rocky Mountain spotted fever.

pabulum (pab'yoo-lum). A cooked cereal for babies.

pachycephaly (pak-i-sef'uh-li). Condition of having an abnormally thick skull.

pachydermatous (pak-i-der'muh-tus). Having a thick skin.

pachydermia (pak-i-der'mi-uh). Condition in which the skin thickens abnormally.

pack treatment. Treatment by wrapping the patient in a blanket.

cold pack. Wrapping in a covering wrung out of cold water.

dry pack. Wrapping in dry hot blankets.

half pack. Wrapping the body from the armpits to the knees.

hot pack. Wrapping in hot blankets, wet or dry.

ice pack. A substitute for an ice bag made by wrapping ice in a towel.

wet pack. Wrapping in wet blankets, hot or cold.

Paget's (paj'ets) **disease**. 1. A disease of the nipple associated with breast cancer. 2. Also a disease of the bones and skull, called *osteitis deformans*.

palate (pal'it). The roof of the mouth.

artificial palate. A plate inserted to close the gap of a cleft palate.

- cleft palate.** Congenital condition in which the bones of the roof of the mouth fail to unite, leaving a cleft.
- hard palate.** The bony front portion of the roof of the mouth.
- soft palate.** The fleshy part of the roof of the mouth near the throat.
- palindromia** (pal-in-dro-mi-uh). The recurrence of a disease; relapse.
- palliative** (pal'i-uh-tiv). A medicine which relieves symptoms of a disease but does not cure it.
- pallor** (pal'or). Paleness.
- palpation** (pal-pay'shun). Examination by feeling with the hand.
- palpitation** (pal-pi-tay'shun). Rapid beating of the heart.
- palsy** (pawl'zi). Paralysis.
- birth palsy.** 1. Paralysis from an injury received at birth. 2. Spastic diplegia.
- cerebral palsy.** 1. Paralysis caused by brain injury. 2. Spastic diplegia.
- crutch palsy.** Paralysis caused by the pressure of a crutch against the armpit.
- lead palsy.** Paralysis of arm muscles from lead poisoning.
- shaking palsy.** Parkinson's disease; paralysis agitans.
- panacea** (pan-uh-see'uh). A cure-all.
- pancreas** (pan'kri-uh-s). The large gland (6 to 8 inches long) located behind the stomach. It secretes a juice that aids in digesting food and also secretes insulin which regulates the blood-sugar level.
- pancreatin** (pan'kri-uh-tin). An extract from ox or hog pancreas which contains a mixture of digestive enzymes. Used in treating certain types of digestive failures and also used in preparing predigested foods.
- pancreatitis** (pan-kri-uh-tigh'tis). Inflammation of the pancreas.
- pandemic** (pan-dem'ik). Epidemic which covers a very large area.
- pantothenic** (pan-toh-then'ik) **acid.** One of the vitamin B complex. It is important in the nutrition of certain animals, but its importance for human beings has not yet been established.
- pap.** Any soft food.
- Papanicolaou's** (pap-uh-nik-o-lay'ooz) **smear.** A vaginal smear which is specially treated. Used in detecting cancer.
- papilla** (pah-pil'uh). A nipple-shaped elevation.
- gustatory or lingual papilla.** One of the small elevations on the tongue which contains taste buds.
- papilloma** (pap-i-lo'muh). An overgrown papilla of the skin or mucous membranes. Such tumors are usually benign and may be due to a virus or a chemical factor.
- papule** (pap'yool). Small abnormal elevation on the skin; a pimple.
- par-anesthesia** (par-uh-an-es-thee'zi-uh). Anesthesia of the body below the waist.
- Paracelsus** (par-uh-sel'sus), (1493-1541). Swiss physician who contributed to the advance of medicine, particularly in the use of chemicals to treat disease.
- paraldehyde** (par-al'duh-highd). A liquid with a characteristic odor and unpleasant taste used as a hypnotic, a pain-reliever, and a sleep-inducer for patients with delirium tremens or other cases where fast action is desirable.
- paralysis** (pah-ral'i-sis). Loss of sensation or movement in a part.
- paralysis agitans.** A nervous disease of the aged marked by tremor of the hands.
- paranoia** (par-uh-noy'uh). A chronic mental disorder in which there are delusions, usually of persecution.
- paraplegia** (par-uh-plee'ji-uh). Paralysis of the legs and lower part of the body.
- ataxic paraplegia.** A form caused by sclerosis of the spinal cord in which paralysis progresses slowly.
- parasite** (par'uh-sight). A plant or animal that lives in or on another organism and gets nourishment from it.
- parasympathetic nervous system.** Part of the autonomic nervous system. It dilates blood vessels, slows the heart beat, and stimulates secretions.
- parathyroid** (par-uh-thigh'royd). Any one of four small glands located behind or imbedded in the thyroid gland. They control the calcium-phosphorus levels in the body.
- paratyphoid** (par-uh-tigh'foyed) **fever.** A disease with symptoms similar to ty-

- phoid fever but caused by different bacteria. It is spread through polluted water or milk.
- Paré** (par-ay'). **Ambroise** (1510-1590). French surgeon who substituted the use of ligatures to tie off arteries for cauterization as a means of preventing bleeding.
- paregoric** (par-eh-gor'ik). An opium compound used to relieve cramps.
- parenchyma** (par-eng'kigh-muh). The parts of an organ that are especially adapted for its function rather than the supporting or protective tissues of the organ.
- parenteral** (par-en'ter-ul). Not into the intestine; designates substances introduced through the mucous membranes, skin, blood, or other means than the intestine.
- paresis** (puh-ree'sis). 1. A slight paralysis. 2. A chronic disease of the brain resulting from syphilis and causing progressive mental and physical deterioration.
- parietal** (puh-righ'i-tal) **bones**. Bones at the sides of the skull.
- parietal lobe**. A cerebral lobe of the brain located at the side of the head, composed of gray matter.
- parodontitis** (par-o-dahn-tigh'tis). Inflammation around a tooth.
- paronychia** (par-o-nik'i-uh). Inflammation around a finger or toe nail.
- parotid** (puh-rot'id) **gland**. The largest of the salivary glands, located near the ear.
- parotitis** (par-o-tigh'tis). Mumps; a virus disease marked by the swelling of one or both parotid glands.
- paroxysm** (par'uhk-sizm). 1. The sudden appearance of symptoms or sudden increase in intensity of symptoms of a disease. 2. Fit; convulsion; spasm.
- parrot fever**. See psittacosis.
- parturition** (par-tyoo-rish'un). The act of giving birth to a child.
- PAS**. Abbreviation for para-aminosalicylic acid; a substance which stops the growth of tubercle bacilli and is used in association with streptomycin in tuberculosis treatment.
- Pasteur** (pahs'ter'), **Louis** (1822-1895). French scientist who discovered that many diseases are caused by germs. His contributions include the pasteurization of milk and wine and the development of a vaccine against rabies.
- Pasteur treatment**. Prevention of rabies by a series of inoculations with vaccine containing a milder form of the rabies virus obtained from rabbits.
- pasteurization** (pas-tyoor-uh-zay'shun). A method of destroying harmful bacteria in milk or other liquids by heating for 30 minutes at 60 C. (140 F.).
- patch test**. Test for allergy to a substance by applying to the skin a piece of cloth containing the substance.
- patella** (puh-tel'uh). Kneecap.
- pathogen** (path'o-jen). Any substance or organism that can cause disease.
- pathogenic** (path-o-jen'ik). Capable of causing disease.
- pathological** (path-o-lahj'i-kal). Diseased.
- pathology** (puh-thahl'uh-ji). 1. The branch of medicine which deals with the changes in the body produced by disease. 2. Effects produced by a disease.
- patient** (pay'shent). Person who is ill or is undergoing treatment.
- Pavlov** (Pahf'lohfv), **Ivan Petrovich** (1849-1936). Russian physiologist who described and demonstrated the conditioned reflex.
- pectoral** (pek'tuh-ral). Relating to the chest.
- pediatrics** (pec-di-at'riks). The branch of medicine that deals with the development and the diseases of children.
- pedicle** (ped'i-kl). The stem of a tumor.
- pediculosis** (pec-dik-yoo-lo'sis). Condition of being infested with lice.
- pellagra** (pel-lag'ruth or puh-lay'gruh). A disease caused by lack of vitamin B₃ (nicotinic acid) in the diet. It is marked by weakness, redness on parts of the body, diarrhea, etc.
- pelvic girdle**. The bony cup formed by the hipbone and the lower bones of the back.
- pelvis** (pel'vis). 1. A basin-shaped cavity, such as the cavity in the kidney. 2. The pelvic girdle.
- pemphigus** (pem'fi-gus). A skin disease marked by the appearance of watery blisters.
- penicillin** (pen-i-sil'in). An antibiotic obtained from the *Penicillium* mold and active against many bacteria such

- as those that cause gonorrhea, syphilis, lobar pneumonia, etc.
- penis** (pee'nis). The external male sex organ from which semen is discharged in sexual intercourse. It also contains the passage for urine.
- pentothal** (pen'toh-thal) **sodium**. A hypnotic given intravenously.
- pepsin** (pep'sin). An enzyme secreted in the stomach to aid in digesting proteins.
- peptic ulcer** (pep'tik ul'ser). An ulcer in the stomach or intestine caused by the abnormal action of digestive juices on the tissues. This condition causes burning pains in the stomach and seems to be related to the mental stress of the patient.
- peptone** (pep'tohn). A simple protein formed by the breakdown of complex protein in digestion.
- percaine** (per'kayn). Local or spinal anesthetic; nupercaine hydrochloride.
- percomorph** (per'ko-morf) **oil**. Oil from the liver of a certain type of fish. It contains vitamin D.
- percussion** (per-kush'un). The act of tapping or thumping a part, particularly the chest and back, as an aid to diagnosis. The sounds indicate the size, position, and density of the organs underneath.
- pericardium** (pehr-i-kar'di-um). The membrane which surrounds the heart.
- perineum** (pehr-i-nee'um). The region between the anus and the genitals.
- periodontal** (pehr-i-o-dahn'tal) **membrane**. A tough tissue covering the roots of the teeth and connecting them to the jaw.
- periosteum** (pehr-i-ahs'ti-um). The fibrous membrane which covers bones.
- peristalsis** (pehr-i-stahl'sis). The progressive wave of muscular contraction which pushes food along in the esophagus and the intestines. The motion appears wormlike.
- peritoneum** (pehr-i-tuh-nee'um). The membrane which forms the lining of the abdominal cavity and covers the stomach, intestines, and other organs.
- peritonitis** (pehr-i-toh-nigh'tis). Inflammation of the peritoneum.
- perlèche** (per-lesh'). A contagious disease in which the corners of the mouth become raw and thickened.
- pernicious** (per-nish'us). Tending to cause death.
- personality** (per-sun-al'i-ti). The characteristics and behavior that are seen in an individual.
- dual or alternating personality**. Existence in an individual of two distinct personalities.
- perspiration** (per-spi-ray'shun). 1. Sweat; the substance excreted through the sweat glands of the skin and consisting of water, salts, urea, ammonia, and other substances. 2. The act of sweating.
- perturbation** (per-too-bay'shun). Opening passage of oviducts which have been blocked.
- pertussis** (per-tus'is). Whooping cough.
- perversion** (per-ver'zhun). A turning away from the normal or correct.
- sexual pervert**. One who indulges in unnatural sexual practices.
- pessary** (pes'uh-ri). 1. A device placed in the vagina to support the uterus or rectum. 2. A vaginal suppository.
- petit mal** (pet-i-mahl'). A relatively mild epileptic attack.
- petrolatum** (pet-ruh-lay'tum). A jelly-like substance obtained from petroleum. It is used as an ointment base and for treatment of burns and minor skin irritations.
- phacolysis** (fu-kahl'is-is). 1. Disintegration of the lens of the eye. 2. Removal of the lens of the eye to relieve high myopia.
- phacomalacia** (fak-o-muh-lay'shi-uh). Abnormal softening of the lens of the eye.
- phagocyte** (fag'uh-sight). Any cell that is able to engulf bacteria or foreign particles. Many of the white blood cells are phagocytes.
- phalanx** (fay'langks) pl. **phalanges** (fuh-lan'jeez). Bone of the finger or toe, three in each digit.
- phallitis** (fal-igh'tis). Inflammation of the penis.
- phallus** (fal'us). The penis.
- phantasm** (fan'tazm). An optical illusion.
- pharmaceutical** (far-muh-soo'ti-kal). A medicine.
- pharmacist** (far'muh-sist). A druggist who is trained to fill prescriptions.
- pharyngeal** (fuh-rin'ji-ul). Pertaining to the tube which connects the mouth, nose, and esophagus.
- pharyngectomy** (far-in-jek'tuh-mi). Surgical removal of part of the pharynx.

pharyngitis (far-in-jigh'tis). Inflammation of the pharynx; sore throat.

pharynx (far'ingks). The throat. The tube composed of muscle and membranes, which extends from the back of the nose and mouth to the esophagus. It is a passage for both food and air and also plays a part in voice resonance.

phenacetin (fee-nas'i-tin). A brand of acetophenetidin used to relieve pain and fever.

phenobarbital (feen-o-bar'bi-tal). A barbiturate. It is a sedative and is also used to control epileptic convulsions.

phenol (fee'nohl). Carbohic acid; a disinfectant.

phenolphthalein (fee-nohl-thal'i-in). A cathartic and a dye. It is the active agent in most "candy" laxatives.

phimosis (figh-mo'sis). Condition in which the foreskin is too tight to be drawn back over the glans penis.

phlebitis (fli-bigh'tis). Inflammation of a vein.

phlegm (flem). Mucus.

phobia (fo'bi-uh). Any abnormal and persistent fear.

acrophobia. Fear of high places.

algophobia. Fear of pain.

androphobia. Fear of men.

apiphobia. Fear of bees.

astraphobia. Fear of lightning.

claustrophobia. Fear of closed places.

cynophobia. Fear of dogs.

gephyrophobia. Fear of crossing a bridge.

haphophobia. Fear of touching or being touched by others.

hematophobia or **hemophobia**. Fear of blood.

lalophobia. Fear of speaking.

necrophobia. Fear of a corpse.

ophidiophobia. Fear of snakes.

pyrophobia. Fear of fire.

thanatophobia. Fear of death.

triskaidekaphobia. Fear of the number thirteen.

zoophobia. Fear of animals.

phosphatase (fahs'fuh-tays). An enzyme that breaks down phosphorus compounds.

phosphate (fahs'fayt). A type of phosphorus compound which is an important part of bone.

phosphocreatinine (fahs-fo-kree-at'i-nighn). A phosphorus compound

found in muscle and important in muscle contraction.

photophobia (fo-toh-fo'bi-uh). A condition in which light causes pain in the eyes.

phthisis (thigh'sis). 1. Tuberculosis. 2. Wasting of the body.

physic (fiz'ik). A medicine, especially one which loosens the bowels.

physician (fi-zish'un). One who is licensed to practice medicine.

physiology (fiz-i-ah'l'uh-ji). The study of the functions and activities of cells, tissues, and organs.

pia, pia mater (pi'uh may'ter). The delicate membrane which is the innermost of three layers covering the brain and spinal cord.

pigeon breast. Chicken breast; condition of prominent sternum.

pigeon-toed. Walking or standing with the toes turned in.

pigment (pig'ment). Coloring matter; dye.

piles. See hemorrhoids.

pimple (pin'pl). Pustule or papule; a nipple-shaped growth on the skin caused by inflammation of a skin pore.

pineal (pin'i-ul) **body**. A small gland located in the back of the brain. Its function is not known.

pink-eye. A contagious inflammation of the eye caused by bacteria. Also called acute contagious conjunctivitis.

pinworm. A parasitic worm which is the cause of enterobiasis, a disease marked by loss of appetite, insomnia, and itching at the anus.

pituitary (pi-too'i-tehr-i) **gland**. A small bean-shaped gland lying at the base of the brain. It has many functions including growth and sexual development.

pituitrin (pi-too'i-trin). Substance obtained from dried pituitary glands of slaughterhouse animals.

pityriasis (pit-i-righ'uh-sis). A skin disease in which colored flaky patches appear.

placebo (pluh-see'bo). An inert substance given to a patient like medicine. It may be given for the mental effect on the patient or it may be a control in tests of a new medicine.

placenta (pluh-sen'tuh). The structure on the wall of the uterus through

which nourishment passes to the umbilical cord from the mother to the fetus in pregnancy; the afterbirth.

plague (playg). 1. Any contagious fatal epidemic disease. 2. Bubonic plague; a highly contagious fatal fever caused by bacteria carried in infected rats and transmitted to man by rat fleas.

black plague. The 14th century epidemic disease which killed many people and caused them to appear black because of severe hemorrhages.

plantar (plan'tar). Pertaining to the sole of the foot.

plaque (plak). 1. Patch or film. 2. A blood platelet.

plasma (plaz'muh). The fluid part of the circulating blood. It differs from blood serum in that it contains fibrin while serum does not.

plastic (plas'tik). Concerned with building up or repairing tissues.

plastic surgery. Surgery to restore lost parts or repair defects, often by grafting tissue from another part.

platelet (playt'let). Thrombocyte; one of the small colorless round bodies found in blood and believed to play a part in blood clotting.

pledget (plej'et). A small compress or wad of cotton, gauze, etc.

plethora (pleth'uh-ruh). A condition in which there is an excess of blood in the blood vessels causing redness of the face and a tendency to nosebleed.

pleura (ploor'uh). The membrane which lines the chest cavity and covers the lungs.

pleurisy (ploor'i-si). Inflammation of the pleura.

pleuropneumonia (ploor-o-noo-mo'ni-uh). Inflammation of the pleura and the lung.

plexus (plek'sus). A network or tangle of veins, lymphatic vessels, or nerves.

solar plexus. A large ganglion or network of nerves located behind the stomach.

plumbism (plum'bizm). Lead poisoning.

pneumococcus (noo-mo-kahk'us). A type of bacterium which is seen in pairs, and can cause lobar pneumonia.

pneumonitis (noo-mo-nigh'tis). Inflammation of the lung.

pneumoresection (noo-mo-ree-sek'shun).

Surgical removal of a part of the lung.

pneumothorax (noo-mo-tho'raks). A collection of air or gas in the chest cavity causing the lung to collapse. It can result from injury to the chest or may occur spontaneously.

artificial pneumothorax. Collapse of the lung induced by injection of air or gas into the pleural cavity in order to rest the lung. It is a form of treatment for patients with tuberculosis of the lung.

pock. A pustule, particularly of smallpox.

pock-marked. Having small pits or scars on the skin resulting from smallpox.

podiatrist (po-digh'uh-trist). One who treats foot ailments; a chiropodist.

polioencephalitis (pahl-i-o-en-sef-uh-ligh'tis). Inflammation of the gray matter of the brain.

polluted (po-loo'ted). Impure.

polycythemia (pahl-i-sigh-thee'mi-uh). An abnormal increase in the number of red blood cells.

polydactylism (pahl-i-dak'til-izm). Having more than five fingers on a hand.

polymyxin (pahl-i-mik'sin). Antibiotic from bacteria; active against gram-negative bacteria, such as those causing urinary infections. It is very toxic when injected but can safely be taken by mouth.

polyp (pahl'ip). A nodular tumor growing from mucous tissues, such as the linings of the nose, bladder, stomach, intestine, or uterus.

polyphagia (pahl-i-fay'ji-uh). Excessive eating.

portal vein. Blood vessel which carries blood through the liver.

post partum (poist par'tum). After childbirth.

PPD. Abbreviation for purified protein derivative, a substance obtained by purifying tuberculin and used like tuberculin in skin tests for tuberculosis.

precancerous (prec-kan'ser-us). Likely to develop into cancer.

pregnancy (preg'nen-si). Being with child; the period between conception and childbirth (approximately 280 days).

- prescription** (pree-skip'shun). Written directions for preparing a medicine.
- pressor** (pres'or). Tending to raise the blood pressure.
- prickly heat**. Miliaria; a rash caused by the skin being irritated by perspiration. Occurs particularly where the skin is folded or rubbed by clothing.
- primaquine** (prigh'muh-kwin). A medicine used against malaria.
- probe** (prohb). A slender flexible instrument used for exploring wounds or body passages.
- procaine** (pro'kayn). A local anesthetic; also a spinal anesthetic used when it is desired to anesthetize for only a short time.
- process** (prahs'ses). In reference to a cell, bone, or organ it means a projecting part or thin extension.
- procreation** (pro-kree-ay'shun). The act of producing offspring.
- proctitis** (prahk-tigh'tis). Inflammation of the rectum or anus.
- proctocoele** (prahk'toh-seel). A hernia of part of the rectum.
- progesterone** (pro-jes'ter-ohn). The female sex hormone produced by the corpus luteum and causing the lining of the uterus to thicken and other body changes necessary before conception can occur.
- prognosis** (prahg-no'sis). Prediction of the probable results of a disease.
- projection** (pro-jek'shun). In psychiatry it refers to a tendency to see in other people one's own repressed feelings.
- prolapse** (pro-laps'). Downward displacement of an organ or the falling down of an organ from its usual place.
- proliferation** (pro-lif-er-ay'shun). Multiplication of cells.
- prontosil** (pron'toh-sil). One of the early sulfa drugs not used any longer.
- prophylactic** (pro-figh-lak'tik). An agent that prevents the development of a disease.
- prophylaxis** (pro-figh-lak'sis). Disease prevention.
- proprioceptor** (pro-pree-o-sep'tor). A nerve that is stimulated from within the body, giving information concerning movement or position.
- propylthiouracil** (pro-pil-thigh-o-yoor'-uh-sil). Medicine which is used in treating overactive thyroid.
- prostate** (prahs'tayt) **gland**. A male sex gland located at the neck of the bladder. It secretes prostatic fluid, which is part of the seminal fluid.
- prostatectomy** (prahs-tuh-tek'tuh-mi). Surgical removal of part of the prostate gland.
- prosthetic** (prahs-thet'ik) **device**. An artificial substitute for a missing part, such as a hand, leg, or eye. It may be used to improve the appearance or it may be functional as well.
- prostration** (prahs-tray-shun). Extreme exhaustion.
- protein** (pro'tee-in). A type of nitrogen compound which forms most of the tissues of the body, especially muscles.
- prothrombin** (pro-thrahm'bin). One of the substances in blood which combines to form thrombin, the enzyme which clots blood.
- protoplasm** (pro'toh-plazm). The jelly-like substance which composes all living cells and is the essential material of life.
- Protozoa** (pro-toh-zo'uh). The lowest division of the animal kingdom. It includes one-celled organisms such as amebae and paramecia, some of which cause disease.
- prurigo** (proo-righ'go). A chronic skin disease marked by intense itching and the development of small pale papules.
- pruritus** (proo-righ'tis). Intense itching.
- psittacosis** (sit-uh-ko'sis). Parrot fever; a contagious disease of birds, such as pigeons and parakeets, which can be transmitted to man. In man it causes inflammation of the lung accompanied by fever.
- psyche** (sigh'ki). The mind, including both conscious and unconscious processes.
- psychiatry** (sigh-kigh'uh-tri). The branch of medicine that deals with mental disorders.
- psychoanalysis** (sigh-ko-uh-nal'is-is). A technique used for treating various mental disorders. By means of free association the patient brings up past experiences and ideas which give insight into the unconscious mind.
- psychology** (sigh-kahl'uh-ji). The branch of science that deals with the mind and behavior.
- psychomotor** (sigh-ko-mo'ter). Pertaining to voluntary movement.

- psychoneurosis** (sigh-ko-noo-ro'sis). A disorder of the mind not caused by any damage or change in brain tissue. The personality is only partially disorganized but marked by anxiety, preoccupation, and tension.
- psychopath** (sigh'ko-path). A person mentally ill yet apparently of sound mind except for an abnormal criminal or sexual drive.
- psychosis** (sigh-ko'sis). A disorder of the mind; insanity.
- psychosomatic** (sigh-ko-so-mat'ik). Pertaining both to the mind and the body, such as diseases which are traced to emotional causes.
- ptomaine** (toh'mayn). An indefinite term for poisonous substances produced by decomposition of protein by bacteria.
- ptyalin** (tigh'uh-lin). An enzyme in saliva which changes starch to sugar.
- puberty** (pyoo'ber-ti). The period of life in which the reproductive organs become capable of functioning. In boys it is marked by the change in voice and discharge of semen. In girls it is marked by the start of menstruation.
- pubic bone** (pyoo'bik). The lower front part of the hip bone.
- pubic symphysis** (sim'fi-sis). The place where the two pubic bones join.
- puerperium** (pyoo-er-pee'ri-um). The period after childbirth during which the uterus returns to normal. Usually considered to last about six weeks.
- pulmonary** (puhl'muh-nehr-i). Pertaining to the lungs.
- pulmotor** (puhl'mo-ter). An apparatus for automatically giving artificial respiration.
- pulse** (puhls). The expansion and contraction of an artery. The contractions of the arterial walls correspond to the contractions of the heart and so are indications of the rate of heart-beat. Normal rate in men: 65 to 72 beats per minute; in women: 70 to 80 beats per minute; more rapid in children.
- pump, breast**. Pump for removing milk from the breasts.
- stomach pump**. Pump for removing poisons from the stomach.
- puncture, lumbar or spinal**. Making a hole through the membranes of the spinal cord in the lower back region in order to withdraw fluid from the spine.
- pupil** (pyoo'pil). The opening in the center of the iris through which light passes.
- purge** (perj). 1. To evacuate the bowels by means of a medicine. 2. Also a medicine which causes a very active bowel movement; a cathartic.
- purpura** (per'pyoo-ruh). A condition in which purple patches appear on the skin or other membranes as a result of hemorrhages of the tiny blood vessels.
- purulent** (pyoo'roo-lent). Containing or forming pus.
- pus**. A thick yellowish fluid containing cells, serum, and the products of inflammation.
- pustule** (pus'tyool). A pus-filled pimple or papule.
- pyelitis** (pigh-eh-ligh'tis). Inflammation of the kidney pelvis.
- pyemia** (pigh-ee'mi-uh). Presence of pus in the blood. Pus-forming germs invade the whole system through the blood stream and may produce abscesses in many different parts of the body.
- pyloric** (pigh-lor'ik). Pertaining to the opening between the stomach and the small intestine.
- pylorus** (pigh-lor'us). The opening of the stomach into the small intestine.
- pyogenic** (pigh-o-jen'ik). Producing pus.
- pyorrhea** (pigh-o-rec'uh). Discharge of pus.
- pyorrhea alveolaris**. A pus-producing inflammation around the roots of teeth, marked by shrinking of gums and loosening of teeth.
- pyretic** (pigh-ret'ik). Pertaining to or characterized by fever.
- pyrexia** (pigh-rek'si-uh). Fever.
- pyribenzamine** (peer-i-ben'zuh-meen). An antihistamine used in allergic conditions.
- pyridine** (peer'i-din). Substance used as an antiseptic, germicide, and heart stimulant.
- pyrogen** (pigh'ro-jen). A substance which causes a rise in temperature. It is believed to come from bacteria but is not destroyed by sterilization and is frequently found in sterile solutions prepared for injections.

pyromania (pigh-ro-mayn'i-uh). An insane impulse to set fires.

Q

Q fever. A mild typhuslike disease characterized chiefly by headache. It is caused by a rickettsia germ and seems to be spread through livestock and milk from infected cows.

quack. One who pretends to have medical knowledge and skill which he does not possess.

quarantine (kwor'an-teen). 1. To isolate persons exposed to or sick with communicable diseases. 2. To detain ships and their passengers coming from places where they were exposed to some communicable disease.

quickenig. The first fetal movements felt by a pregnant woman. It usually occurs in the fourth or fifth month.

quinine (kwhig'nighn). A bitter substance obtained from bark of the cinchona tree. It is most important as the oldest treatment for malaria although it has other medicinal uses.

quinsy (kwin'zi). An acute inflammation of the tonsil with formation of pus.

R

rabbit fever. See tularemia.

rabies (ray'bi-eez). An acute infectious disease caused by a virus and marked by fever, muscle spasm, and delirium. It is communicated to man by the bite of infected animals, usually dogs. Also called hydrophobia.

rachitic (ray-kit'ik). Pertaining to rickets.

radiation sickness. A disease marked by nausea and diarrhea and caused by overabsorption of radiation products.

radioactive (ray-di-o-ak'tiv). Emitting energy rays which can pass through substances opaque to light and produce electrical or chemical effects.

radium (ray'di-um). A highly radioactive element used in treating cancer.

radius (ray'di-us). The bone of the forearm on the thumb side.

ranula (ran'yoo-luh). Cystic tumor under the tongue due to obstruction of one of the glandular ducts.

rash. A temporary eruption on the skin.

rat-bite fever. A disease caused by bac-

teria transmitted to man by the bite of a rat.

Rauwolfia (raw'wolf-i-a). An ancient Hindoo medicine used in the treatment of high blood pressure. It also produces a tranquil mood, and is prescribed for certain emotional disorders. Some of its purified components are called Serpasil, Reserpine, etc., and have similar medical properties.

receptors (ree-sep'ters). Nerve endings in the skin which are sensitive to heat, touch, pain, etc., and carry impulses to the brain.

recessive characteristic. The weaker of two competitive hereditary traits.

recrudescence (ree-kroo-des'ens). An increase in the symptoms of a disease after a period of improvement.

rectal (rek'tl). Pertaining to the rectum.

rectum (rek'tum). The part of the large intestine nearest the anus.

red blood cell. See erythrocyte.

Reed, Walter (1851-1902). Leader of the army medical commission which eliminated the danger of yellow fever in Panama, permitting construction of the Panama Canal.

reflex (ree'fleks). Automatic reaction; action done unconsciously in response to a stimulus.

refractory (ree-frak'tuh-ri). Not being cured by treatment.

regeneration (ree-jen-er-ay'shun). Repair of injured tissue.

regressive (ree-gres'iv). In psychology it refers to a return to a more childish state that had been more satisfying to the individual but is no longer in keeping with the age or social status.

regurgitation (ri-ger-jitay'shun). 1. Throwing up undigested food from the stomach. 2. Backward flow of blood through a leaky heart valve.

rehabilitation (ree-huh-bil-i-tay'shun). Restoring a handicapped person to useful activity.

relapse (re-laps'). The return of a disease after the patient has started to recuperate.

relapsing fever. Any one of several infectious diseases caused by bacteria carried in lice or ticks. It is marked by alternating periods of fever and normal temperature. Includes tick fever, louse fever, famine fever.

- relaxation** (ree-lak-say'shun). Release of tension.
- remedial** (ri-mee'di-ul). Curative; acting as a remedy.
- remission** (ree-mish'un). A lessening of symptoms.
- renal** (ree'nal). Pertaining to the kidney.
- rennet** (ren'et). Milk-curdling enzyme from calf stomach.
- rennin** (ren'in). An enzyme in the stomach which digests milk.
- repression** (ree-presh'un). Rejection of an unpleasant matter from the conscious mind. It remains in the unconscious mind and may be expressed in a different form.
- resection** (ree-sek'shun). Surgical removal of a part of an organ.
- Reserpine** (res'er-peen). See Rauwolfia.
- residual** (ree-zid'yoo-ul). Remaining.
- residual air**. Air that still remains in the lungs after breathing out forcibly.
- resorcin** (ree-zor'sin) or **resorcinol** (ree-zor'si-nul). An antiseptic used especially for skin diseases.
- respiration** (res-pi-ray'shun). The act of breathing; also the taking in of oxygen and throwing off of carbon dioxide by any part of the body.
- rest cure**. Treatment of disease by prolonged rest, usually in bed.
- restraint** (ree-straynt'). Controlling the actions of mental patients by means of force.
- resuscitation** (ree-sus-i-tay'shun). Revival of one apparently dead.
- retching** (rech'ing). A strong involuntary effort to vomit.
- retention** (rec-ten'shun). Keeping within the body substances normally excreted.
- reticular** (ree-tik'yoo-lar). Like a network.
- reticulo-endothelial** (ree-tik-yoo-lo-endo-thee'li-ul) **system**. Tissue network containing phagocytes and found in the spleen, liver, lymph glands, and bone marrow.
- retina** (ret'i-nuh). The inner coat of the eye on which light rays are focussed. It is sensitive to light and transmits impulses to the brain through the optic nerve.
- retractor** (ree-trak'ter). An instrument for drawing back the edges of a wound.
- retrograde** (ret'ro-grayd). Going backward.
- Rh factor**. Hereditary factor in blood which can cause complications if an Rh-negative mother carries a fetus with Rh-positive blood.
- rheum** (room). Watery discharge.
- rhinitis** (righ-nigh'tis). Inflammation of the mucous membrane of the nose.
- acute rhinitis**. Cold in the head.
- rhinoplasty** (righ'no-plas-ti). Plastic surgery of the nose.
- rhodopsin** (ro-dahp'sin). Visual purple; the purplish pigment in the rods of the retina which is bleached on exposure to light.
- Rhus** (rus). A genus of trees and shrubs which includes several poisonous plants.
- Rhus diversiloba**. Poison oak.
- Rhus toxicodendron**. Poison ivy.
- Rhus venenata**. Poison sumac.
- rib**. Any one of the twenty-four bones of the chest, attached to the vertebrae in the back and, except for the last five pairs, to the sternum in the front.
- false ribs**. The ribs not attached to the sternum.
- floating ribs**. The last two pairs of ribs.
- riboflavin** (righ-bo-flay'vin). Vitamin B₂; vitamin G; lactoflavin. It is found in eggs, milk, liver, and other foods. A deficiency of riboflavin results in soreness around the corners of the mouth, redness of eyes, and changes in the skin and tongue.
- rice-water stools**. Bowel discharge which looks like water in which rice has been boiled. It is a characteristic of cholera.
- ricin** (righ'sin). Poison from the seeds of the castor-oil plant.
- rickets** (rik'its). A disease of infants and children caused by lack of vitamin D. It is marked by improper development of bones and teeth; the bones may become crooked and deformed and the fontanels are delayed in closing.
- Rickettsia** (rik-et'si-uh). A group of microorganisms some of which cause disease. They are smaller than most bacteria but larger than the viruses.
- rickettsial pox**. A rickettsial disease characterized by the appearance of a firm red papule on covered parts of

the body, later followed by fever and rash. The germ is carried by the house mouse and has only been reported in New York City.

rigor mortis (rig'er mor'tis). Stiffening after death.

ringworm. A general term for skin disease caused by fungus and marked by ring-shaped patches. Includes *tinea capitis*, athlete's foot, dermatomycosis.

RN. An abbreviation for registered nurse.

Rochelle (ro-shel') salt. Potassium sodium tartrate; a mild cathartic.

Rocky Mountain spotted fever. A rickettsial disease marked by fever, headache, muscle and joint pains, and rash. It is spread by ticks.

rod. Stick-shaped structure in the retina which contains rhodopsin, a substance affected by light.

roentgen (rent'gen) rays. X-rays. Named for Wilhelm Konrad von Röntgen (1845-1923), German physicist who discovered them.

Rorschach (ror'shakh) test. Inkblot test; a test for personality traits based on the interpretation of ten inkblots of different shapes and colors. Named for Herman Rorschach (1884-1922), Swiss psychiatrist who developed the test.

rose fever. An allergic reaction to roses, similar to hay fever.

roseola (ro-zee-o'luh). 1. A rose-colored skin rash. 2. Epidemic roseola; German measles.

rouge (ruf'ij). Any undigestible matter in food which helps to stimulate bowel movements.

round worms. Parasites which can infect man causing ascariasis, a condition marked by digestive disturbance and abdominal pain. The worms are spread through material contaminated with feces.

rubella (roo-bel'uh). German measles.

rubeola (roo-bee'o-luh). Measles.

rudimentary (roo-di-men'tuh-ri). Undeveloped.

rupture (rup'cher). 1. A tearing or breaking apart. 2. Hernia.

Rush, Benjamin (1745-1813). American physician, a signer of the Declaration of Independence, who described dengue fever.

S

saccharin (sak'uh-rin). A crystalline substance obtained from coal tar and used as a substitute for sugar. It is many times sweeter than sugar.

sacroiliac (say-kro-il'i-ak). The joint of the upper portion of the hip bone and the large bone in the lower part of the spine.

sacrum (say'krum). The large bone near the lower end of the spine just above the coccyx. It is formed by the fusion of segments which are separate in infancy.

sadism (sad'izm). Sexual perversion in which one gets pleasure from inflicting cruelty on others.

Saint Anthony's fire. Erysipelas; a disease marked by fever and redness of skin. It is caused by bacteria (*streptococcus*).

St. Vitus's dance. Chorea; a nervous condition in which the muscles twitch involuntarily.

saline (say'lighn). Salty.

saliva (suh-ligh'vuh). The fluid secreted into the mouth by the salivary glands. It mixes with the food, lubricating it and aiding in the digestion of starch.

salivary (sal'i-vehr-i) glands. The glands of the mouth that secrete saliva. The principal ones are the parotid, submaxillary, and sublingual.

salpingectomy (sal-pin-jek'tuh-mi). Surgical removal of a Fallopian tube.

salvarsan (sal'var-san). Arsphenamine; an arsenic compound used in treating syphilis and other infections.

salve (sav). Ointment.

sanatorium (san-uh-taw'ri-um). An institution for treatment of certain diseases, especially tuberculosis, chronic diseases, and mental disorders.

sanitary (san'uh-tehr-i). Promoting health.

sanity (san'i-ti). Soundness of mind.

sarcoma (sar-ko'muh). A cancerous tumor from connective tissue.

satyriasis (sat-ir-igh'uh-sis). Excessive sexual desire in a man.

scab. A crust formed over a sore or wound.

scapula (skap'yoo-luh). Shoulder blade.

scarification (skar-i-fi-kay'shun). Operation of making many small scratches or pricks in the skin.

- Schick** (shik) **test**. Skin test for diphtheria immunity. A small amount of diphtheria toxin is injected into the skin.
- schizoid** (skiz'oyd). An individual who is unusually unsocial and introverted.
- schizophrenia** (skiz-o-free'ni-uh). Dementia praecox; a mental disorder in which the person withdraws from reality into a mental world of his own.
- Schleiden, Matthias Jakob** (1804-1881) and **Theodor Schwann** (1810-1882). Two German scientists who collaborated on the theory that living tissue is composed of units or cells.
- sciatic** (sigh-at'ik) **nerve**. The largest nerve of the body. It is attached to the lower part of the spinal cord, and branches to form the sensory and motor nerves of the legs and feet.
- sciatica** (sigh-at'i-kuh). Inflammation of the sciatic nerve with pain at the back of the thigh.
- scirrhous** (skeer'us). A hard carcinoma.
- sclera** (sklee'ruh). The tough outer coat which covers all of the eyeball except the portion covered by the cornea.
- sclerosis** (skli-ro'sis). Hardening of connective tissue, particularly the thickening of the walls of blood vessels.
- scoliosis** (sko-li-o'sis). Sideward curvature of the spine.
- scopolamine** (sko-pahl'uh-min). A compound used as a sedative and sleep inducer.
- scorbutic** (skor-byoo'tik). Affected with scurvy.
- scrofula** (skrahf'yoo-luh). Tuberculosis of the lymph glands, a disease causing pus-filled abscesses and tissue breakdown in the affected areas.
- scrotum** (skro'tum). The pouchlike structure that holds the testicles.
- scrubbing**. The thorough washing of hands and arms with soap, water, and a nail brush which is carried out by surgeons and others before assisting with an operation.
- scurvy** (sker'vi). A disease caused by lack of vitamin C in the diet. It is marked by anemia, weakness, and bleeding gums.
- sebaceous** (see-bay'shus) **glands**. The oil glands of the skin, which secrete a fatty substance to lubricate the skin.
- seborrhea** (seb-o-ree'uh). A disease of the sebaceous glands in which they secrete abnormally. The secretion may collect on the skin as an oily coating or in crusts.
- sebum** (see'bhum). The secretion of the sebaceous glands, a fatty substance.
- seconal** (sek'uh-nal). A barbiturate, used as a sedative.
- secretion** (see-kree'shun). Substance given off by glands or tissues to be used in the body. It differs from an excretion, which is a waste product, not usable by the body.
- section** (sek'shun). In surgery it means to cut or divide.
- sedation** (si-day'shun). Act of calming the nerves by use of a sedative.
- sedative** (sed'uh-tiv). A substance that calms and quiets nervous excitement.
- sedimentation** (sed-i-men-tay'shun) **rate**. The time required for blood cells to settle out of a standard volume of unclotted blood. The rate changes in certain diseases, such as tuberculosis.
- Seidlitz** (sighd'litz) **powder**. Effervescent powder used as a cathartic. The active ingredients are sodium bicarbonate, potassium sodium tartrate, and tartaric acid.
- semen** (see'men). Thick whitish liquid containing spermatozoa secreted by the testes and released in sexual intercourse.
- semicircular canal**. The passage of the inner ear that controls the sense of balance.
- seminal vesicle** (seni'uh-nal ves'i-kl). The sac in which semen is stored.
- Semmelweis** (sem'el-vighs), **Ignaz Philipp** (1818-1865). Viennese physician who showed that infection following childbirth was caused by germs carried on the unwashed hands of physicians. He stressed the importance of cleanliness of doctors and hospitals.
- senescence** (si-nes'ens). Aging; growing old.
- senility** (suh-nil'i-ti). 1. Old age. 2. Feebleness of mind and body associated with old age.
- senna** (sen'uh). Dried leaves which produce a laxative action.
- sensation** (sen-say'shun). Feeling or mental impression produced when nerves are stimulated.
- sensitized** (sen'si-tighzd). Made more

- sensitive or susceptible to a particular substance; allergic.
- sepsis** (sep'sis). Presence of germs in blood or tissues.
- septicemia** (sep-ti-see'mi-uh). Presence in the blood of germs or poisons from them.
- septum** (sep'tum). A partition or dividing wall in an organ.
- Serpasil** (serp'a-sill). See Rauwolfia.
- serum** (seer'um). Clear liquid separated from a blood clot.
- serum albumin**. Albumin found in blood.
- pooled serum**. Mixture of serum from several different people.
- serum sickness**. An allergic reaction from injection of serum. It may be marked by hives, fever, and enlarged glands.
- shin**. The front of the leg below the knee.
- shingles**. Herpes zoster; inflammation of a nerve with pain and blisters along the path of the nerve.
- shock**. Condition in which the body processes are slowed down considerably. It is brought on as a result of bodily injury or extreme emotion, and is marked by weakness, paleness, and rapid pulse.
- anaphylactic shock**. Shock caused by injection of a substance to which the patient is sensitized.
- electric shock**. Shock caused by electric current passing through the body. Electric shock from current through the brain is used in treating certain mental illnesses.
- insulin shock**. Coma caused by overdose of insulin. Used in treating certain mental illnesses.
- shell shock**. A general term for serious mental disorders resulting from war service; battle fatigue.
- sickle-cell anemia**. Type of anemia caused by malformed blood cells.
- siderosis** (sid-er-o'sis). Inflammation of the lungs caused by inhaling iron dust. Found particularly among miners and welders who are exposed to the dust in their work.
- silicosis** (sil-i-ko'sis). A disease in which the lung is damaged by silicon dioxide. It is associated with occupations such as sand blasting, stone cutting, and others in which there is sand in the air.
- silver nitrate**. Compound used in solution as an antiseptic and germicide, especially for mucous membranes.
- Simpson, James Young** (1811-1870). Edinburgh obstetrician who first used anesthetics in childbirth.
- sinus** (sigh'nus). A cavity or hollow space, particularly those in the bones of the nose.
- sinusitis** (sigh-nus-igh'tis). Inflammation of a sinus, especially the maxillary sinus.
- skeleton** (skel'i-tun). Bony framework of the body.
- sleeping sickness**. Disease found in Africa in which the patient shows increasing drowsiness. It is caused by a protozoan parasite transmitted to man by the bite of a tsetse fly.
- slide**. A thin rectangle of glass on which objects are placed for microscopic study.
- smallpox**. An acute contagious disease caused by a virus and characterized by fever and pustules.
- smegma** (smeg'muh). The thick secretion of the sebaceous glands of the external genitalia.
- soap, tincture of green**. A liniment made from a medicinal potassium soap. Useful against some skin diseases.
- sodium amytal** (am'i-tal). Substance used for sedation.
- sodium benzoate**. Food preservative; also used to test liver function.
- sodium bicarbonate**. Baking soda; used to counteract stomach acidity.
- sodium chloride**. Table salt.
- sodium citrate** (sit'rayt). White powder which can alkalize urine. Also used by blood banks to keep collected blood from clotting.
- sodium salicylate** (sal'i-sil-ayt). Substance used in treating acute rheumatic fever.
- sodium thiosulfate**. An antidote for certain metallic poisons; also the hypo of photography.
- soft palate**. The roof of the mouth near the throat.
- solar plexus** (so-ler-plek'sus). Celiac plexus; a large knot of nerves in the abdomen.

- somnambulism** (sahm-nam/'byoo-lizm). Sleepwalking.
- somnifacient** (sahm-ni-fay/'shent). A substance which is capable of producing sleep.
- soporific** (so-puh-rif/'ik). 1. Producing sleep. 2. A substance capable of producing sleep.
- spasm** (spazm). A sudden violent involuntary contraction, usually of muscles.
- clonic spasm.** One in which the muscles relax quickly.
- tonic spasm.** One in which the muscles remain rigid for a long time.
- spastic** (spas'tik). Convulsive or resembling a spasm.
- spastic hemiplegia.** Partial paralysis of one side in which spasms are induced by movement of the affected muscles.
- spastic paraplegia.** Paralysis of the lower legs with muscle spasms when the affected parts are moved.
- speculum** (spek/'yoo-lum). An instrument for stretching a passageway or opening in order that it may be examined more easily.
- spermatocoele** (sper'muh-toh-seel). Cystic enlargement of the epididymis.
- spermatocystitis** (sper-muh-toh-sis-tigh'-tis). Inflammation of the seminal vesicles.
- sphincter** (sfingk'ter). A ring of muscle which contracts to close an opening.
- anal sphincter.** One of the two muscles that close the anus.
- pyloric sphincter.** The circular muscle at the opening between the stomach and small intestine.
- sphygmomanometer** (sfig-mo-muh-nahm-'i-ter). Instrument used to determine blood pressure.
- spinal canal.** The passage formed by the arches of the vertebrae and containing the spinal cord.
- spinal column.** The backbone; the vertebral column.
- spinal cord.** The long cordlike structure of nerves and nervous tissue which extends down from the brain and serves as the main center for reflex actions and other involuntary actions.
- spinal nerves.** Nerves which attach to the spinal cord.
- spirochete** (spigh'ro-keet). A spiral-shaped bacterium. One type causes syphilis.
- splanchnic** (spiangk'nik) **nerves.** Nerves of the internal organs.
- spleen.** A large reddish-brown gland lying between the stomach and the diaphragm in the upper portion of the abdomen. Its functions are not yet understood, but it is believed to aid blood-cell and antibody formation.
- splint.** A support for a broken bone or other injured part.
- Stader splint.** A splint consisting of a metal bar fastened to the bone with steel pins.
- spondylitis** (spahn-duh-ligh'tis). Inflammation of the vertebrae.
- spondylosis** (spahn-duh-lo'sis). Abnormal stiffening of a vertebral joint.
- sport.** An organism that is unusually different from its parents; a mutation.
- spotted fever.** 1. Typhus fever. 2. Epidemic cerebrospinal meningitis. 3. Tick fever.
- sprain.** Wrenching of a joint, producing stretching or tearing of ligaments or tendons.
- sprue** (sproo). A disease in which the body is unable to absorb fats and there is difficulty in blood formation. Symptoms are diarrhea, indigestion, soreness of mouth and tongue, and loss of weight. Administration of vitamin B₁₂ is usually effective in relieving symptoms.
- sputum** (spyoo'tum). Discharge from lungs and throat expelled by spitting. It is composed of saliva and mucus.
- stapes** (stay'peeze). The small stirrup-shaped bone of the inner ear; stirrup.
- staphyledema** (staf-il-i-dee'muh). Swelling of the uvula.
- staphylococcus** (staf-i-lo-kahk'us). A spherical-shaped bacterium usually found in clusters. Bacteria of this type cause boils and pus-forming infections of wounds.
- steapsin** (stee-ap'sin). An enzyme which aids in digesting fat. It is produced in the pancreas.
- stenosis** (stuh-no'sis). Narrowing of a body tube or opening.
- sterile** (stehr'il). 1. Free from germs. 2. Not able to produce offspring.
- sternum** (ster'num). Breast bone; the bone in the middle of the front of

the chest to which the ribs attach.
stethoscope (steth'uh-skohp). An instrument used to discover and amplify the sounds of the heart, lungs, and other organs.

stigma (stig'muh). A spot or mark on the skin.

stillborn. Dead at birth.

stimulus (stim'yoo-lus). Anything which arouses action in a body organ, such as muscle contraction, gland secretion, or nerve impulse.

stirrup (stir'up). See stapes.

stomach (stum'uk). The saclike organ just below the diaphragm between the esophagus and the intestine. It can hold about one quart of food, which it digests by the action of enzymes and hydrochloric acid.

stomatitis (sto-muh-tigh'tis). Inflammation of the inside of the mouth; sore mouth.

stool. Feces; waste from the bowels.

strabismus (struh-biz'mus). A squint; an eye condition in which both eyes cannot be focused at the same time.

strain, muscle. An injury from overuse or misuse which caused unusual tension in the muscle.

strait jacket. A device which prevents movement of the arms and is used in restraining a violent mental patient.

strawberry tongue. One with enlarged papillae that project as bright red points; seen in scarlet fever.

streptococcus (strep-toh-kahk'us). A spherical-shaped bacterium found in chain arrangement, when observed microscopically. Some types cause disease, such as scarlet fever and sore throat.

streptomycin (strep-toh-migh'sin). An antibiotic from a fungus, effective against tuberculosis and other infections.

striated (strigh'ayt-id). Having streaks or stripes.

stroke. A sudden severe attack as of paralysis, apoplexy, or sunstroke.

stroma (stro'muh). The tissue, usually connective tissue, which forms the framework of an organ, as distinguished from parenchyma, the tissue which carries out the specialized function.

stupe (stoop). A cloth wrung out of hot water and applied to the skin as a

counterirritant. Sometimes used with turpentine or other irritants.

stupor (stoo'per). A state of partial unconsciousness in which the individual seems hardly to feel or notice anything.

sty or **stye**. Inflammation caused by infection or blocking of one of the sebaceous glands of the eyelid.

styptic (stip'tik). Stopping bleeding with an astringent.

subconscious (sub-kahn'shus). The contents of the mind not on the conscious level.

subcutaneous (sub-kyoo-tay'ni-us). Under the skin.

subtilin (sub'tuh-lin). An antibiotic from bacteria and active against gram-positive bacteria.

Sucaryl (soo'kuh-ri). A sweet substance used instead of sugar in diabetic diets.

sulfadiazine (sul-fuh-digh'tuh-zeen). One of the sulfa drugs active against many infections; used in treating meningococcal meningitis, urinary tract infections, and some fungus diseases. In powder form it has been used in surgery and on wounds to prevent infection.

sulfonamides (sul-fo'nuh-mighds). The sulfa drugs; a group of medicines which stop growth of bacteria. Some of the most important are sulfadiazine, sulfaguanidine, sulfamerazine, and sulfasuxidine.

sulfones (sul'fohns). A group of compounds related to the sulfonamides and also active against many bacterial infections. They are used in the treatment of Hansen's disease (leprosy).

sunstroke. A form of heatstroke caused by overexposure to the sun. There may be headache or collapse.

superego. The part of the unconscious mind that opposes and criticizes.

supine (soo-pighn'). Lying on the back.

suppository (suh-pahz'i-taw'ri). A medicated mass shaped to fit into one of the body openings. It is solid at room temperature but melts when in the body. Suppositories are used especially for diseases of the rectum or to treat constipation.

suppuration (sup-yoo-ray'shun). Formation of pus.

suprarenal (soo-pruh-ree-nul). Above the kidney; adrenal.

suprarenal body. See adrenal gland.

surgery (ser'jer-i). Branch of medicine dealing with wounds, deformities, and diseases treated by operation or manipulation.

orthopedic surgery. Surgery that deals with deformities and other conditions of bones and joints.

plastic surgery. Operative surgery for repairing defects or replacing lost parts.

susceptible (sus-sep'ti-bl). Not immune; capable of being affected by a substance or by disease germs.

suture (soo'cher). 1. Uniting of two surfaces, particularly by stitching. 2. The thread, catgut, or other material used in uniting tissues.

swab (swahb). A stick with a tuft of absorbent cotton at the end. It is used to cleanse wounds, apply medicines, or obtain samples of secretions.

Sydenham (sid'en-ham), **Thomas** (1624-1689). Englishman who was an outstanding physician of the 17th century. He used practical methods of treatment and observed and described various diseases.

sympathectomy (sim-puh-thek'tuh-mi). Surgical removal of a part of the sympathetic nervous system.

sympathetic nervous system. The spinal nerves which cause contraction of blood vessels, increase in heart rate, and inhibition of stomach and glandular secretions.

sympathin (sim'puh-thin). A hormone which causes the heart to beat faster. It is produced by nerves of the sympathetic nervous system and in the muscles of internal organs.

sympysis (sim'fi-sis). 1. Growing together of bones. 2. The line of union between bones which were originally separate but have grown together.

symptom (simp'tum). Any change from the normal which indicates disease.

synapse (sin'aps). The point of contact between nerve endings.

syncope (sin'ko-pi). A swoon or faint; temporary unconsciousness caused by lack of oxygen or blood in the brain.

syndrome (sin'droh-m). A group of symptoms which occur together and seem to have the same cause.

synergy (sin'er-ji). Cooperation in action, such as among muscles carrying out a task, or among medicines used together in treating a disease.

synovia (sigh-no'vi-uh). The lubricating fluid of the joints. It is secreted by membranes lining the joint capsules and surrounding the tendons.

syringe (seer'inj). A device used to inject fluids into the body.

systemic (sis-tem'ik). Affecting the entire body.

systole (sis'toh-li). Contraction of the heart.

systolic (sis-tahl'ik) **murmur**. A murmur of the heart heard during the contraction.

Szent-Györgyi, Albert (b. 1893). Hungarian-born biochemist who isolated vitamin C. Winner of the Nobel prize in 1937.

T

tabes (tay'beez). 1. A gradual wasting away of the body or of a part of the body; emaciation. 2. *Tabes dorsalis*; a form of late syphilis characterized by degeneration of part of the spinal cord.

tachycardia (tak-i-kar'di-uh). Abnormally rapid heartbeat.

talipes (tal'i-pee-z). Clubfoot; a deformity of the foot in which it is twisted out of normal position, occurring congenitally or from paralysis.

tampon (tam'pun). A cotton plug.

tannic acid. Substance obtained from trees and used as a dressing for burns, as an astringent, and as an antidote for metallic poisons.

tantalum (tan'tuh-lum). A metal used to repair defects of the skull.

tarsus (tahr'sus). The instep.

tartar (tahr'tahr). A calcium compound deposited on the teeth by the saliva.

taste buds. The tiny structures on the tongue which are sensitive to taste.

tattooing (tat-too'ing). Coloring the skin permanently by injecting pigment into the skin. It is used to hide white spots on the eye which may result from infections and is also used to cover up unsightly birthmarks.

telangioma (tel-an-ji-o'muh). A tumor made up of tiny blood vessels which have become dilated.

telangiogenesis (tel-an-ji-o'sis). Any disease of the capillary blood vessels.

temperature (tem'per-uh-choor). The degree of heat or cold. Normal body temperature is 98.6 F.

temple (tem'pl). The region of the head above the eye socket and between the eye and the ear.

temporal (tem'puh-ral) **bone**. One of the bones of the skull covering the inner ear.

tendinitis (ten-di-nigh'tis). Inflammation of a tendon.

tendon (ten'dun). A white fibrous cord which connects muscle to bone.

tenesmus (ti-nez'mus). Straining, especially during urination or bowel movement.

tenia (tee'ni-uh) or **teniasis** (tec-nigh'uh-sis). Condition of infection with a tapeworm.

teniafuge (tee'ni-uh-fyooj). A medicine that causes tapeworms to be expelled.

tenositis (ten-o-sigh'tis). Inflammation of a tendon.

tension (ten'shun). Condition of being tense or stretched.

tensor (ten'ser). A muscle which makes a part firm or tense.

tetramycin (tehr-uh-nigh'sin). An antibiotic from a fungus. It is very similar to aureomycin but is even less toxic to the human body.

testicle (tes'ti-kl) or **testis** (tes'tis). One of the two male sex glands located in the scrotum which produce spermatozoa and semen.

test meal. A meal given and later withdrawn from the stomach to show the digestive power of the stomach.

testosterone (tes-tahs'ter-ohn). Male sex hormone which induces development of male characteristics. It is prepared commercially from the testes of bulls and is used in treating certain conditions.

tetany (tet'uh-ni). A nervous disorder in which there are muscular spasms, cramps, and convulsions. It may accompany certain gastric or intestinal disorders or result from a calcium deficiency such as might occur after removal of parathyroids.

tetracycline (tet-ra-cy'clean). An antibiotic administered by mouth, believed to cause fewer gastrointestinal disturbances than aureomycin and

tetramycin. It is active against many diseases caused by microorganisms.

tetracyan (tet'ra-sin). See tetracycline.

thalamus (thal'uh-mus). An egg-shaped structure of the brain.

theca (thee'kuh). A sheath such as the one enclosing a tendon.

therapeutics (thehr-uh-pyoo'tiks). Science of healing.

therapy (thehr'uh-pi). Treatment of disease.

shock therapy. Treatment of mental disease by producing convulsions with electric current or insulin. It is believed that the brain waves are altered or interrupted.

thermolabile (ther-mo-lay'bil). Changed or destroyed by heat.

thermometer (ther-mahm'i-ter). Instrument to measure temperature.

oral thermometer. One for taking temperature by mouth.

rectal thermometer. One for taking the temperature through the anus.

thiamine (thigh'uh-min). Thiamine hydrochloride; vitamin B₁; a vitamin found in yeast and other foods and necessary to prevent beriberi.

thiouracil (thigh-o-yoo'ruh-sil). A compound used to treat conditions of overactive thyroid. It interferes with the utilization of iodine by the thyroid gland.

thoracic (tho-ras'ik). Pertaining to the chest.

thoracotomy (tho-ruh-kahl'is-is). The process of breaking up lung adhesions. This operation requires removal of part of the ribs.

thorax (tho'raks). The chest.

Thorazine (thor'a-zeen). A medicine with powerful antinauseant and anti-vomiting properties. It is also used in some types of emotional illness.

threshold (thresh'old). The point at which a sensation can just barely be felt or sensed.

thrombin (thrahm'bin). An enzyme which is necessary for blood to clot. It forms from other substances in the blood after blood is shed.

thromboclasia (thrahm-bahk'luh-sis). Breaking up of a blood clot.

thrombocyte (thrahm'bo-sight). A blood platelet.

- thrombosis** (thrahm-bo'sis). Formation of a blood clot blocking a blood vessel.
- thrombostasis** (thrahm-bahs'tuh-sis). Collecting of blood in a part, leading to formation of a thrombus.
- thrombus** (thrahm'bus). A blood clot formed in a blood vessel.
- thrush**. A disease of infants caused by a fungus and marked by the appearance of small white spots or sores in the mouth and on the tongue.
- thymus** (thigh'mus). Gland of children located in the mediastinum.
- thyroid** (thigh'royd) **gland**. A large ductless gland located in the neck. Its secretions regulate body metabolism.
- thyroidectomy** (thigh-royd-ek'tuh-mi). Surgical removal of the thyroid.
- thyroxin** (thigh-rahk'sin). A chemical compound, originally isolated from the thyroid gland, which has the physiologic properties of whole gland extract.
- tibia** (tib'i-uh). The bone on the inner side of the lower leg.
- tic**. Twitching.
- tick**. A blood-sucking insect related to the mites but larger.
- tick fever**. Any disease which is transmitted by ticks, such as Rocky Mountain spotted fever, Colorado tick fever, or Texas cattle fever.
- tincture** (tingk'cher). A medicinal alcoholic solution weaker than an extract.
- tinea** (tin'i-uh). Ringworm.
- tissue** (tish'yoo). A collection of cells of the same type forming a definite structure.
- tone**. Normal strength and tension of the body or of muscles.
- tonic** (tahn'ik). A medicine that helps restore normal tone.
- tonsil** (tahn'sil). A mass of lymphoid tissue, especially one of the two located at the back of the tongue.
- tonsillectomy** (tahn-si-lek'tuh-mi). Surgical removal of the tonsils.
- tonsillitis** (tahn-si-ligh'tis). Inflammation of a tonsil.
- topical** (tahp'i-kal). Local; in a definite area.
- torpor** (tor'per). Numbness; apathy.
- torticollis** (tor-ti-kahl'is). Stiff neck in which the head is turned to one side.
- tourniquet** (toor'ni-ket). Device to press on blood vessels to stop bleeding.
- toxemia** (tahn-see'mi-uh). Blood poisoning.
- toxic** (tahnk'sik). Poisonous.
- toxin** (tahnk'sin). A poison produced by germs.
- toxin-antitoxin**. A mixture of diphtheria toxin and its antitoxin used for vaccination against diphtheria.
- toxoid** (tahnk'soyd). A toxin changed so that it is no longer poisonous.
- trachea** (tray'ki-uh). Windpipe; the tube which extends from the voice-box to the bronchi.
- tracheitis** (tray-ki-igh'tis). Inflammation of the trachea.
- tracheostenosis** (tray-ki-o-sti-no'sis). Narrowing of the trachea.
- tracheotomy** (tray-ki-aht'uh-mi). A surgical operation to produce an artificial opening into the trachea through the tissues of the neck.
- trachoma** (truh-ko'muh). A chronic communicable disease of the eye caused by a virus. It is characterized by inflammation of the conjunctiva and may lead to blindness.
- traction** (trak'shun). The act of pulling, such as is used in correcting dislocations.
- trance** (trans). An abnormal sleep.
- transference** (trans-fer'ens). Shifting of a mental attitude from one person or thing to another.
- transfusion** (trans-fyoo'zhun). Injection of fluid, especially blood or plasma, into a vein.
- transpiration** (tran-spuh-ray'shun). Excretion through the skin of air, sweat, or vapor.
- transplantation** (trans-plan-tay'shun). Grafting of tissues from one part of the body to another part, or to another body.
- transvestitism** (trans-ves'ti-tizm). A perversion in which the individual prefers to wear the clothing worn by the opposite sex.
- trauma** (traw'muh). Injury.
- psychic trauma**. A painful emotional experience.
- trembles**. Milk sickness; weakness and vomiting caused by eating milk or milk products of animals that have eaten white snakeroot or rayless goldenrod.
- tremor** (trem'er). An involuntary quiver.
- trench mouth**. Vincent's angina.

trephine (tree-fihn'). 1. To cut a circular piece of bone out of the skull to relieve pressure on the brain. 2. The saw used in the operation, an improvement over the trepan.

triceps (trigh'seps) **muscle**. The muscle which extends the forearm.

trichiasis (trigh-kigh'uh-sis). Ingrown hair.

trichinella (trik-uh-nel'uh). The parasites of the type that cause trichinosis.

trichinosis (trik-i-no'sis). Disease caused by eating insufficiently cooked pork or other meat infected with a parasitic worm. The disease is marked by nausea, diarrhea, muscle soreness, edema, difficulty in breathing, and fever.

tricuspid (trigh-kus'pid). See valve.

trigeminal (trigh-jem'i-nal) **nerve**. The fifth cranial nerve. It serves the forehead, cheek, teeth, tongue, and interior of the mouth.

troche (tro'kee). A medicated tablet.

trochlear (trahk'li-cr) **nerve**. The fourth cranial nerve. It controls eye movements.

trophic (trahf'ik). Relating to nutrition.

Trudeau (troo-doh'), **Edward Livingston** (1848-1915). American physician who established a tuberculosis sanatorium at Saranac Lake and advocated open-air treatment of tuberculosis.

truss (trus). Device to hold a hernia in place.

trypsin (trip'sin). An enzyme produced by the pancreas to digest proteins.

tsetse (tset'see) **fly**. The fly that spreads African sleeping sickness.

tsutsugamushi (soot-soo-guh-moosh'i) **disease**. Japanese river fever; scrub typhus; disease found in southwest Asia and Japan and caused by Rickettsia spread through mites of mice and rats.

tubercle (too'ber-kl). A nodule.

tuberculin (too-ber'kyoo-lin). An extract from tubercle bacilli used in diagnostic tests for tuberculosis.

tuberculin test. A skin test for tuberculosis sensitivity. A small amount of tuberculin is injected into the skin. If there is no marked inflammation or tissue breakdown after two days, the test is negative, indicating absence

of tuberculosis infection. A change from a negative to a positive skin reaction is suggestive of tuberculosis.

tubule (too'byool). Any small tube.

tularemia (too-luh-ree'mi-uh). Rabbit fever; a disease caused by bacteria from small wild animals, particularly rabbits. It is marked by a sudden attack of chills and fever accompanied by swollen lymph nodes. It is transmitted by bites of flies or ticks which have previously bitten infected animals, or it may be transmitted through handling infected animals or eating the insufficiently cooked meat of infected animals.

tumefaction (too-mi-fak'shun). Swelling or puffiness.

tumor (too'mer). 1. Swelling. 2. New and abnormal growth; neoplasm.

turgid (ter'jid). Swollen.

twilight sleep. A state of consciousness in which one reacts to pain and other sensations but has no memory of them afterward. It is used in childbirth and is usually produced by scopalamine.

twins, fraternal. Two children developed from different ova but born at the same time. May be of the same or different sex.

twins, identical. Two children developed from the same ovum. They are of the same sex and of very similar appearance.

tympanic (tim-pan'ik) **membrane**. Ear drum.

tympanum (tim'puh-num). The middle ear.

typhilitis (tif-ligh'tis). Inflammation of the cecum.

typhoid (tigh'foyed) **fever**. A bacterial infection marked by fever and diarrhea. Spread by contaminated water, milk, or food, especially shellfish.

typhus (tigh'fus). Disease marked by headache, chills, fever, and general pains. It is caused by rickettsia carried by lice. It cannot be spread from man to man.

murine typhus. A disease similar to but milder than the louse-borne typhus. It is carried by rodents and spread to man through fleas.

scrub typhus. See tsutsugamushi disease.

tyrothricin (tigh-ro-thrigh'sin). An anti-

biotic from soil bacteria. It contains two substances, gramicidin and tyrocidin, which are active against many bacteria. It is used on wounds and skin infections but is too toxic for internal use.

U

- ulcer** (ul'ser). An open sore other than a wound; it is usually pus-producing.
- ulceration** (ul-ser-ay'shun). Formation of an ulcer.
- ulitis** (yoo-ligh'tis). Inflammation of the gums.
- ulna** (ul'nuh). The larger bone of the forearm located on the side opposite the thumb.
- ulotomy** (yoo-laht'uh-mi). 1. Cutting into the gum. 2. Cutting into scar tissue to relieve tension or correct deformity.
- ultramicroscopical** (ul-truh-migh-kroskshap'i-kl). Too small to be seen with a microscope.
- ultraviolet** (ul-truh-vigh'uh-lit). Invisible rays of light shorter than the violet rays of the visible spectrum.
- umbilical** (um-bil'i-kal) **cord**. The cord which connects the fetus to the placenta. It contains the blood vessels which provide nourishment to the developing child.
- umbilicus** (um-bil'i-kus). The navel; the round depression on the skin of the abdomen marking the point of attachment of the umbilical cord during fetal life.
- unconscious** (un-kahn'shus). 1. In psychiatry it refers to behavior not controlled by the conscious mind. 2. Insensible.
- undulant** (un'dyoo-lent) **fever**. See brucellosis.
- unguent** (ung'gwent). Ointment or salve.
- urea** (yoo-ree'uh). A nitrogen compound which is the chief product of protein breakdown in the body and is excreted in urine.
- uremia** (yoo-ree'mi-uh). Condition in which waste products normally excreted in urine remain in the blood.
- ureter** (yoo-ree'ter). The tube through which urine passes from the kidney to the bladder.
- urethane** (yoo'ri-thayn). Substance used to treat certain types of leukemia.
- urethra** (yoo-ree'thruh). The canal through which urine is discharged from the bladder.
- urethritis** (yoo-ri-thrigh'tis). Inflammation of the urethra.
- uric** (yoo'rik) **acid**. One of the waste products of metabolism found in blood and urine.
- urinalysis** (yoo-ri-nal'i-sis). Examination of the urine for chemical and microscopic contents.
- urination** (yoo-ri-nay'shun). Act of discharging urine from the bladder; micturition.
- urine** (yoo'rin). Liquid waste of the body which is collected by the kidneys and stored temporarily in the bladder for excretion. It is normally a clear pale amber fluid with a faint odor.
- uriferous** (yoo-ri-nif'er-us) **tubule**. One of the many tubes in the kidney which carry urine from the capsules to the kidney pelvis.
- urology** (yoo-rah'l'uh-gy). The branch of medicine dealing with the diseases of the male urogenital system and the female urinary system.
- urticaria** (er-ti-kay'ri-uh). Hives; a condition in which itchy elevations (wheals) appear on the skin. They usually are not accompanied by any other symptoms and disappear in a day or two. They are caused by an allergic reaction.
- USP**. Abbreviation for United States Pharmacopeia. On medicines it indicates that they comply with standards of strength and purity set by the U. S. Pharmacopeia.
- uterectomy** (yoo-ter-ek'tuh-mi). Hysterectomy; surgical removal of the uterus.
- uterotomy** (yoo-ter-aht'uh-mi). Cutting into the uterus.
- uterus** (yoo'ter-us). The womb; the hollow pear-shaped organ in the pelvis which holds the developing fetus.
- uvula** (yoo'vyoo-luh). The small conical structure which hangs down from the roof of the mouth near the throat.

V

vaccination (vak-suh-nay'shun). Inoculation with weakened or dead germs to develop immunity to a specific dis-

- ease, particularly the inoculation against smallpox.
- vaccine** (vak'seen). A substance containing weakened or dead germs prepared for vaccination.
- vaccinia** (vak-sin'i-uh). Cowpox.
- vagina** (vuh-jigh'nuh). The passageway in the female between the uterus and the external genitalia.
- vaginismus** (vaj-uh-niz'mus). A painful spasm of the vagina.
- vaginitis** (vaj-uh-nigh'tis). Inflammation of the vagina.
- vagotonia** (vay-go-toh'ni-uh). Increase in the excitability of the vagus nerve, slowing the heart, etc.
- vagus** (vay'gus) **nerve**. The tenth cranial nerve, which has both motor and sensory functions and serves the stomach, intestines, heart, lungs, larynx, esophagus.
- valve, aortic**. The valve between the aorta and the left ventricle.
- bicuspid or mitral valve**. The valve between the left auricle and the left ventricle.
- pulmonary valve**. The valve at the junction of the pulmonary artery and the right ventricle.
- pyloric valve**. The valve between the stomach and the small intestine.
- tricuspid valve**. The valve between the right auricle and the right ventricle.
- varicella** (var-uh-sel'uh). See chickenpox.
- varicocele** (var'i-ko-seel). Swollen veins in the spermatic cord.
- varicose** (var'i-kohs) **vein**. An unnaturally swollen vein.
- varicotomy** (var-i-kaht'uh-mi). Surgical cutting out of a varicose vein.
- variola** (vuh-righ'uh-luh). Smallpox.
- vas deferens** (vas def'er-ens). The tube which extends from the epididymus to the ejaculatory duct.
- vascular** (vas'kyoo-ler). Pertaining to or containing blood vessels or other vessels.
- vasectomy** (vas-ek'tuh-mi). Surgical removal of the vas deferens.
- Vaseline** (vas'uh-leen). A brand of petroleum jelly.
- vasoconstrictor** (vas-o-kahn-strick'ter). A substance which causes blood vessels to contract or narrow.
- vasodepressor** (vas-o-dee-pres'er). A substance which lowers the blood pressure.
- vasodilator** (vas-o-digh-lay'ter). A substance which causes blood vessels to enlarge.
- vasomotor** (vas-o-mo'ter). Any substance which causes contraction or enlargement of blood vessels.
- vasopressin** (vas-o-pres'in). A hormone produced by the pituitary gland which raises blood pressure.
- vector** (vek'ter). A person or animal that carries disease germs.
- vein** (vayn). A blood vessel which carries blood to the heart from other parts of the body.
- jugular vein**. The vein in the neck which carries blood from the brain.
- vena cava** (vee'nuh kay'vuh). One of the two large veins which empty into the right auricle.
- venereal** (vi-neer'i-ul) **disease**. One spread by sexual intercourse. Syphilis, gonorrhea, and chancroid are the principal ones.
- venesection** (ven-i-sek'shun). Cutting open a vein for withdrawal of blood.
- venipuncture** (ven'i-punk-tyoor). Puncture of a vein for injection of fluid or withdrawal of blood.
- venom** (ven'um). Poison produced by a snake or other animal.
- venous** (vec'nus). Pertaining to the veins.
- ventral** (ven'trul). Pertaining to the front of the body.
- ventricle** (ven'tri-kul). 1. Either of the lower chambers of the heart from which blood is pumped to the arteries. 2. A small cavity.
- venule** (ven'yool). A little vein.
- vermiform** (ver'mi-form) **appendix**. See appendix.
- vermin** (ver'min). Harmful animals or insects such as lice, mice, worms that are parasitic, and flies.
- veronal** (veer'o-nahl). A brand of barbitol.
- verruca** (vee-roo'kuh). A wart.
- vertebra** (ver'ti-bruh). Any one of the thirty-three bones of the spinal column.
- vertigo** (ver'ti-go). Dizziness.
- Vesalius** (vi-say'li-us), **Andreas** (1514-1564). Belgian physician who prepared a treatise on body structure

- and laid the basis for the modern study of anatomy.
- vesicle** (ves'i-kl). A saclike structure either normal or abnormal.
- vesicotomy** (ves-i-kaht'uh-mi). Cutting into the bladder.
- vestigial** (ves-tij'i-ul). Rudimentary.
- viable** (vig'huh-bl). Able to live.
- vibrio** (vib'ri-o). A type of bacteria such as the one that causes cholera.
- villus** (vil'us) pl. villi. One of the tiny projections on the lining of the intestine.
- Vincent's angina**. Trench mouth; a contagious infection of the mouth which causes bleeding gums and bad breath. It is caused by the combined action of a spirochete and a bacillus.
- viosterol** (vig-ahs'ter-ol). A vitamin D preparation made by irradiating ergosterol, a substance found in plant and animal tissues.
- Virchow** (feer'ko), **Rudolf** (1821-1902). German pathologist who applied the cellular theory to disease and showed how disease could be identified through observation of cells and tissues.
- virulent** (veer'yoo-lent). Extremely poisonous or harmful.
- virus** (vig'hrus). A small organism too small to be seen with the ordinary microscope.
- viscera** (vis'er-uh). The internal organs.
- viscid** (vis'id). Sticky.
- visual purple**. The purple pigment in the rods of the retina of the eye; rhodopsin.
- vital statistics**. Death rates, birth rates, sickness rates, etc.
- vitamin** (vig'tuh-min). A substance present in small amounts in food and necessary for normal functioning of the body.
- vitamin A**. Fat-soluble vitamin found in fish, butter, cheese, and egg yolk; prevents night blindness.
- vitamin B complex**. Group of water-soluble vitamins that are generally found together; prevents beriberi.
- vitamin B₁**. Thiamine.
- vitamin B₂ complex**. Group of vitamins, including riboflavin and nicotinic acid (niacin).
- vitamin B₁₂**. Antianemia factor; used in treating pernicious anemia.
- vitamin C**. Ascorbic acid; prevents scurvy.
- vitamin D**. A fat-soluble substance present in egg yolk, butter, and fish-liver oil; prevents rickets.
- vitamin E**. Vitamin found in wheat-germ oil.
- vitamin G**. Riboflavin.
- vitamin K**. Substance found in green plants, fish meal, and egg yolk and necessary for normal blood clotting.
- vitamin P**. Citrin; a substance found in lemon juice, paprika, and other plants and necessary for normal capillary permeability.
- vitreous body** or **vitreous humor** (vit'ri-us). Transparent semifluid mass between the lens and the retina.
- vocal cords**. The ligaments in the larynx which vibrate in speech.
- voice box**. The larynx.
- void** (voyd). To release waste matter.
- Vollmer patch test**. A tuberculin test in which gauze saturated with tuberculin is placed on the skin.
- volvulus** (vahl'vyoo-lus). A twisting of the intestine causing blockage.
- vomit** (vahn'it). 1. To throw up matter from the stomach. 2. The material from the stomach ejected through the mouth.
- voyeurism** (voy'er-izm). Sexual excitement from seeing suggestive pictures or sights.
- vulva** (vul'vuh). The external genital organs of the female including the vaginal lips, clitoris, and other structures.
- vulvitis** (vul-vigh'tis). Inflammation of the vulva.
- vulvovaginitis** (vul-vo-vaj-uh-nigh'tis). Inflammation of the vulva and the vagina, particularly an infection seen in children. This infection is caused by bacteria and produces redness, swelling, and a copious discharge.

W

walleye (waw'igh). 1. A condition in which the cornea is white and opaque; leukoma. 2. A condition in which

the images seen by the eyes are slanted in different directions; divergent strabismus.

ward. A large room in a hospital where there are several patients.

isolation ward. One where persons having contagious diseases are kept safely apart from other patients.

probationary ward. One where patients are kept until it is determined whether they have a contagious disease.

psychopathic ward. One where patients with mental disease are kept temporarily.

wart. A small overgrowth on the skin.

Wassermann (wahs'er-mun) test. A blood test for syphilis; named for August Paul von Wassermann, (1866-1925), German bacteriologist who developed the test.

Wells, Horace (1815-1848). An American dentist who led the way for general anesthesia in surgery by using nitrous oxide (laughing gas) during teeth extractions.

wen. A cyst of an oil gland of the skin, particularly on the scalp.

wet nurse. A woman who breast feeds another's baby.

wheal (hweel). A smooth elevation on the skin, such as hives.

whelk (hwehk). A wheal on the face.

white cell. See leukocyte.

white matter. The white portion of the brain and spinal cord. It contains only fibers, no nerve cell bodies.

whites. Leukorrhea.

Widal (vee'dal) test. A blood test for typhoid diagnosis.

windpipe. Trachea.

wintergreen oil. Methyl salicylate; gaultheria oil; an oily liquid used as a liniment for rheumatic pains, as a local antiseptic, or as a flavoring agent.

wisdom tooth. The last molar on either side of each jaw.

witch hazel. An astringent.

writer's cramp. Pain in the arm, hand, and fingers caused by writing.

xanthoma (zan-tho'muh). Condition in which fatty tumors form in the skin especially in the eyelids.

xerophthalmia (zee-rahf-thal'mi-uh). Drying of the eyes; often associated with lack of vitamin A.

xerosis (zi-ro'sis). Abnormal dryness of skin or eyes.

xiphoid (zif'oyd) process. The cartilage projecting from the lower edge of the breast bone.

x-ray dermatitis. A skin eruption caused by overexposure to x-rays.

Y

yaws. Frambesia: a chronic disease caused by a spirochete and characterized by sores which first appear in the genital area. It is found in tropical countries.

yellow fever. A virus disease spread from infected persons or monkeys by mosquitoes. Symptoms are fever, headache, weakness, backache, and nasal congestion. Found in South America and Africa.

yoghurt (yo'goort). Cultured milk; milk fermented by certain bacteria. It is believed to destroy intestinal germs.

yolk sac or yolk (yohk). The part of the egg that nourishes the embryo; the yellow portion in birds' eggs.

Z

zinc acetate (zink as'i-tayt). An astringent; an antiseptic for treating eye inflammations.

zinc oxide. A white powder or ointment used in treating skin disorders and burns.

zona (zo'nuh). 1. A beltlike structure or band. 2. Herpes zoster.

zoster (zahs'ter). See herpes zoster.

zwieback (zwee'bak). Pieces of rich bread which have been heated in the oven until they turned yellow.

zygote (zigh'goht). The cell formed by the union of an egg and a sperm; a fertilized egg.

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ABOUT THE AUTHOR

IF DR. BENJAMIN F. MILLER had chosen his own life story, with all its ups and downs, especially to prepare himself to write a medical guide for American homes, he could scarcely have chosen more felicitously than fate did for him.

He was born and reared in a typical American middle-sized city—Fitchburg, Massachusetts; he had his undergraduate work in one of the finest scientific colleges in the world—the Massachusetts Institute of Technology; he had his medical training at Harvard Medical School, the Cornell Medical Center, and the Rockefeller Institute for Medical Research.

*During World War II, he attained the rank of major. Falling ill, and spending more months in hospitals than anyone could ever wish for himself, he wrote pamphlets on a wide variety of medical subjects for the U. S. Public Health Service. It was at this time that the idea for this book first began. Since then he has written many articles on medicine for such widely read magazines as Collier's and McCall's. In addition he has published *You and Your Doctor*, a successful book examining in detail the doctor-patient relationship, and edited, with the late Dr. Max Pinner, a volume entitled *When Doctors Are Patients*. He is widely traveled and has practiced medicine in various parts of the country.*

The father of three children, he lived, until recently, in Boston, where he was Lecturer on Medicine at the Harvard Medical School and Senior Associate Physician at the Peter Bent Brigham Hospital. There he was principally engaged in carrying on and directing research designed to widen the horizons of medical knowledge.

It was also there that this book was mostly written. In 1954 he accepted an appointment as Director of the May Institute for Medical Research in Cincinnati, and also as Associate Professor at the University of Cincinnati Medical School. Dr. Miller's wife, Zelma, is a Ph.D. in chemistry and is also engaged in medical research.

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